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# THE BUILDER

## A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

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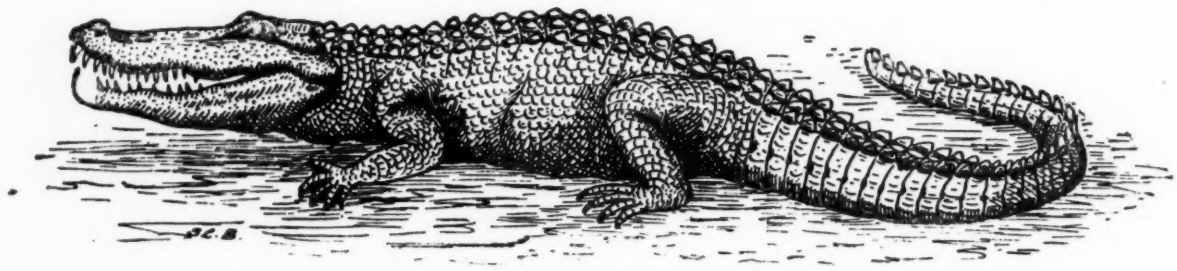

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# THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

*WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."*

VOL. CXXII.—No. 4131. APRIL 7, 1922.


## INDUSTRIAL EXHIBITIONS.

THE British Industries Fair, now extended to different cities, the building and other exhibitions which are now so frequent, give opportunities to industry which will probably very much extend its field, and in such exhibitions as the Building Exhibitions at Olympia the opportunity of matching one product against the other, the ability to compare between many similar examples of manufacture assembled together in one spot, gives new facilities to the buyer which he never had before. Because these advantages are incontestable, while there may be added to them the important one of the opportunity for friendly meeting which such occasions offer, we may none the less give some attention to considerations which grow out of them. It does seem as though some more permanent form given to them—a continuity which might reduce the heavy charge entailed in repeatedly bringing these great exhibitions together—is a desirable thing, and we have heard it suggested that the White City or other centre should be made the permanent home for such exhibitions. Both in regard to number and importance these exhibitions have added a large industry to those already existing, and their cost in erection, freight, and general expenditure is such a liability on the manufacturer that the question may be asked whether it is not possible by more co-ordination of effort and a more organised control to reduce the cost to the exhibitor; this, of course, without loss to any advantage to be gained through them. The remedy, however, does not appear to lie with the management but with the exhibitors themselves, who, no doubt, demand a freedom of choice as to how they shall show their work. But it might be possible for the exhibitors to form a committee out of their more prominent members to regulate in some degree the character of the stands in order to keep a certain unity between them, and to prevent tasteless and extravagant over self-assertion. It is said that manufacturers on these occasions sometimes book orders sufficient for the whole year, and there can be no doubt of the general advantage lying in them. At the same time, as they have grown up a good deal at hazard, left to a control of rather unrestricted individualism, it is worth considering if some more disciplined organisation with more permanent arrangements cannot be created.

It is true that the impetus given to trade is not temporary, and that it would not reach the manufacturer without this added means of publicity, but it would be of advantage to him if the cost and extent of the enterprise could be reduced a little. The large displayed advertisements which the stands so often present are rather an unimaginative way of proceeding. Would it not be possible for art to exercise more influence, which we are sure it might do, both in regard to the form and expense? We venture to urge, not only for economy but for the sake of the kind of temporary and ephemeral employment which it imposes on labour, that those restraints which are directed by good taste should come to the assistance of the exhibitor. We are welcoming the signs of this greater restraint in industry itself, and we should like to see the same principle of "fitness for use" applied to the exhibition stand. In the former direction the good work of the Design and Industries Association may be mentioned. Competition between exhibitors rests a little too much on the power of money, and we would suggest an alternative competition—that of becomingness and good taste. We believe that many exhibitors feel the heavy cost involved by these exhibitions, and it may be suggested that a prize or prizes might be offered for the manufacturer whose exhibition stand incorporated the best results, not only in the goods shown, but in the way they were shown. Another means through which an improved appearance could be given to the general effect of these exhibitions would be in regarding all the stands as a whole, to be united together by a scheme of form and colour, giving co-ordination to them. More uniformity of character in form, in colour, and in type printing, are some of the means by which greater unity of appearance could be promoted. We are glad to notice that at the Glasgow Housing Exhibition last year the arrangement of the stands, which were uniform in character with white woodwork and black lettering throughout, showed some improvement in this direction.

Some general supervision and editing of the unrestricted eccentricities of competitive advertisement would be very useful. If the corridors had more connected character to give a pleasant general unity of effect as one passed down them it would create agreeable feelings which might facilitate business. At present we believe it to be the case that the stands are erected by different firms to the order of the exhibitor. A general scheme, to which the exhibitor had to conform, would offer a better result, and the reserve and dignity achieved through it should give added significance to the exhibits. Greater concentration in the exhibits themselves, by which we mean fewer but representative examples of the firms' manufactures, would lead to closer attention, as the mind is almost bewildered by the quantity when multiplied over so great a number of exhibitors, and can hardly retain a clear impression. At the last Building Exhibition we were struck, especially in the case of some of the firms exhibiting, with the size and elaboration of their display, not always, as it seemed to us, showing the best taste in the way it was carried out. The cost, we should think, far exceeded the advantage to be gained by such display. It would be possible, surely, to advertise the merits of a material equally suitably in a less expensive and more tasteful manner. Are clients really much impressed by the startling character and cost of the erection which is to acclaim the merits of a particular article?

But there is a consideration lying in another direction, applying to the very extensive employment of labour on such temporary work. The effect of this large employment in purely tentative exhibition display is, we think, in a degree an abuse of labour, and its effect on craftsmanship is to lower its character. The carcases of the White City and Earl's Court stand as tragic memorials of this pouring out of labour in vain and doubtful work. Not designed and built to last, yet made to exert the effect of permanence, a wrong estimate of the needs and obligations of labour is set up, tending gravely to its deterioration, and undermining standards of work which are a fundamental source of the training and contentment of the worker. The pride in work can hardly be sustained on an increasing activity in such ephemeral and vain production; are the pleasures even worth it? Is it not a sign of the low value in which labour is often held that so much of it should be devoted to such temporary production, exercised in such cheap and unsatisfactory ways? And does it not help to sustain a false estimate of the nature and obligations of labour, in regarding employment as a sufficient end in itself, without consideration of the kind of employment or the sort of temper that is bred in the worker through its production? Does it not tend to encourage in the worker the wage ideal as the only one, instead of the work ideal, lowering life to the acceptance of standards contradicting its well-being, breeding disaffection, and the loss of contented citizenship, which can rest only on pride and self-respect?

In saying this we have no intention to deprecate the advantage and usefulness of these exhibitions, and in pointing out a certain waste which seems to lie in them, both in regard to the effect on the worker through his employment in so much temporary and perfunctory craftsmanship, and the expense involved in unnecessary display and in the erection and re-erection of the stands, we have only in view to suggest that these exhibitions, which have become a part of the life of the country, and which have grown in a sense anyhow, should now be combined into some more ordered and controlled activity.

That some of the views expressed in the foregoing remarks are shared by others is shown by the interesting little competition organised by the Royal Academy Ateliers in conjunction with Mr. H. Greville Montgomery for the lay-out of the Building Exhibition at Olympia, as well as for exhibitors' stands, the successful designs in which we are glad to illustrate in this issue.

# NOTES.

**Official Architecture.**

Mr. Maurice Webb, in his recent interesting address before the Liverpool Architectural Society, had some very pertinent things to say in regard to "official architecture," and asked whether the architect should take part as a salaried official in a Government department. Great as are the difficulties in which the architect may find himself, it appears to many concerned in the well-being of the profession that so long as the architect does so he gives countenance to a procedure very injurious to architecture, and that in so far as he does so he discourages its independence, which requires that its practice should be free from Government control. The Office of Works which, says Mr. Webb, under Sir Alfred Mond, grew "like a weed in the soil of bureaucracy," is held by independent architects to be a menace which has been an injury to architecture and is a standing peril to the arts as a whole. The appearance of this bureaucratic control of arts, writes a correspondent, "finds its outlet in other directions. Salaried officials, instead of confining their efforts within their legitimate sphere, are in active and unfair competition with the artist. This is not so important perhaps as the injury to art itself of this Government and municipal control, which depresses the output and takes a likeness only from itself. Whether the architect or the artist accept these positions as salaried officials, the effect is much the same; they are countenancing that which imperils the freedom of the arts, and for a temporary need—for there are few architects or craftsmen who would willingly choose the position—they forsake that which is no less necessary for their own development than for art itself."

**The New Society.**

We have to welcome the newly-founded Norfolk and Norwich Association of Architects, with Mr. E. T. Boardman as its first President, and to note the inaugural dinner in Norwich on March 24. Sir Aston Webb, P.R.A., as the principal guest, offered some encouraging remarks on the foundation of this new society, and pointed out how helpful to architects and their art this kind of association was. He emphasised the extraordinary difficulty there was in educating a man in his art, which must be a thing born in him and individual. He was very doubtful how far the influence of a master was good; it depended very much on the master. Delightful as the practice of architecture was, it was a serious and responsible occupation, for it involved the spending of other people's money, and it was imperative on the architect to see that the money was laid out to the very best advantage.

**The Cardiff Conference.**

In connection with the Conference of the R.I.B.A. which is to be held in Cardiff on June 8 to 10, a lecture, entitled "Architecture and the Citizen," was given on March 31, under the auspices of the South Wales Institute of Architects, in the Assembly Hall of the Technical College, by Mr. W. S. Purchon, M.A., A.R.I.B.A., Head of the Department of Architecture and Civic Design in that institution. The object of the lecturer was an endeavour to interest the people of South Wales in architecture and in the R.I.B.A. in view of the forthcoming Conference, and with the same object a series of articles is being published in the local Press. We give some notes of the lecture on another page, and we are glad to call attention to this activity of Cardiff architects, which cannot fail to create interest in the Conference when it is held.

**Art and the Humanities.**

The Report of the Royal Commissioners on the utility of scholarship and the danger of the humanities (*i.e.*, classics, history, philosophy, poetry) being overshadowed at the universities by what is considered to be more useful, is encouraging in that it points to a reconsideration of that lower aim which looks no farther ahead than the next dividend or wage. This should have its interaction upon art, and we may hope to see a growing recognition that its place in life should be restored. Our national life would benefit in replacing these grosser aims by a nobler tradition. The attempt to label anything which withstands the paramount commercialism as "highbrow," is an attack on culture and scholarship from those who have little acquaintance with either. That anyone strong enough to defend a higher standard should be labelled a "superior" person

**The Tower of St. Magnus-the-Martyr, from Lower Thames Street.**

From a Drawing by Mr. Frederick G. Pain, Lic.R.I.B.A.

[This view of the tower of St. Magnus-the-Martyr will be completely blocked out by Adelaide House, now in course of erection.]

is a desire to minimise the power of its influence. We see complaints made against the architect for standing aside in an isolation out of touch with his time, when he rightly upholds the claims of architecture against purely utilitarian considerations, and will not endorse the commercial impulse to make use of it. Architecture cannot surrender its prerogatives, and it is well to know that the measure of support is growing which would rescue the best things from this deterioration.

**Advertisements of Cottages.** A CORRESPONDENT looking for a house informs us that "in the current number of a weekly journal, giving this sort of information, there are only 17 (out of 157 advertisements) unfurnished houses! Of those 17, very few are to be let—most are for sale. All the rest are furnished houses and cottages in various parts of the country. It is necessary to point to a great abuse lying in this. These furnished houses are empty, except in the summer, when they are presumably used by the owners or let by them. Every week, we understand, there is this long list, and a list almost as long of people wanting unfurnished houses to live in. So long as this idea of 'letting furnished' is regarded as fair and honourable the country people will have no cottages left except those under the 'tied system' of the farmers. A short Act of Parliament would scatter this sort of enterprise, and would tend to simplify the housing problem." We are glad to see that Mr. Robert Clough, M.P., has brought the matter up in the House of Commons, and in a letter to *The Times* he states: "I have reports showing that several women rent cottages from £9 to £12 a year, and let them during the season at from £3 to £5 5s. a week. If the tenant is dissatisfied no money is refunded." By putting in just sufficient quantity of furniture they are outside the provisions of the Rent Restriction Acts.

**Rent Restriction Continuance.** IN *The Times* for March 13 it is reported that 300 representatives of Lancashire and Cheshire trade unions, labour councils, and co-operative organisations held a conference with the view of organising a movement for the continuance of the Rent Restriction Act after the date at present fixed for its expiration (June 24, 1923), and a resolution was unanimously passed calling upon the Government to extend the duration of the Act, and also to amend it so as to give local authorities power to prevent houses from being kept untenanted longer than one month where such houses are for sale. Some time back we ventured to predict that such a movement was certain to be put on foot, and that organised steps would have to be taken to meet it. One of the great objections to class legislation, whether the "class" be persons or particular kinds of property, is that it creates privileges and it is difficult to repeal. There has been abundant proof that this rent restriction has been a great mistake, extended as it has been to properties of higher value and for so long a period, but those who are interested in house property will make a great mistake if they rely solely on the facts and do not make some effort to bring those facts forward, so that our legislators may be informed on the question before they take action.

**Medal to be presented annually by the S.A.D.G. to the Architectural Association for the best student of the year who has completed the Diploma Course.**

**Young Architects and Experience.** A CORRESPONDENT writes: Mr. Maurice Webb, in his paper on "Present-day Architectural Problems," which was fully reported in your last issue, said that, when a student had completed his five years' course in a school, he had to consider whether he should start in private practice for himself or take a post as a salaried official in a Government office. It would be a questionable proceeding, generally speaking, for a young architect to start on his own account immediately on leaving a school and without the practical experience which is generally gained by acting as assistant to another architect. Draughtsmanship, history and theory can be studied in a school, but practical experience is best acquired in an office where actual work is in hand and stern, everyday problems have to be solved; practical problems which are very different from the imaginary ones set in the schools.

**Bolingbroke House.** THIS old house at Battersea, of so many historic and literary associations, of which now only one wing remains, is shortly to be given over to the housebreakers. It is long since when its lawns stretched down to the river, and the Cedar Room, in which Pope is said to have written his "Essay on Man," may now go to America, for according to a contemporary "there is little demand for rare, antique house decorations in this country." The house itself has for some years been used as offices to a flour mill, and is now required for extensions to the mill itself. So the old world changes, making place for the new. Rich as this country is in such associations, it is not without regret that these old landmarks pass away, and it is very desirable that in important instances this inheritance of our historic past should not be parted with, because of lack of proper supervision to prevent the sale of their contents to foreign countries.

**"Architects' Olympian Night."** THE usefulness of such exhibitions as the one to be opened on Tuesday at Olympia does not need emphasising in these columns, and that full advantage will be taken of this year's Building Exhibition we have no doubt. In addition to the exhibits themselves, which will include materials, appliances, and inventions in daily use, interesting lectures will be given, while various societies connected with the industry are making arrangements for the convenience of members visiting the Exhibition. An event which will undoubtedly be an attraction is the fancy dress ball and carnival organised by the Architectural Association for Friday, April 21, following the dinner given by the Architects' Welcome Club. The ball will be in the Conference Hall, entered from the gallery over the Pillar Hall, and dancing will be from 9.30 p.m. to 5 a.m., preceded by a carnival procession, which will consist of "Brighter Building Stunts," arranged for 9 p.m. Fancy dress must be worn by dancers, we are informed, but Venetian cloaks will be permitted. We hope many visitors to the Exhibition will assist in making the event a success by taking tickets, which may be obtained from the Secretary of the Architectural Association. The co-operation between architects, builders, and others with the organisers of the Building Exhibition is to be welcomed, and this "Olympian Night" is another indication of the interest taken by the profession in the industry.

# GENERAL NEWS.

### Professional Announcements.

As from March 13, Mr. S. Gordon Jeeves, M.S.A., has dissolved partnership with Mr. Albert E. Bullock, and is now practising at 4, George-street, Hanover-square, W. 1. (Telephone Mayfair 5233).

Mr. John T. Burt, F.S.I., quantity surveyor, has removed from 7, Pocklington's-walk, to 6a, St. Martins, Leicester.

### New Telephone Exchange.

The new "Maryland" telephone exchange was opened on Saturday last to replace the Stratford and Broadway exchanges. It has taken nearly eighteen months to build and equip, and is the twelfth new exchange opened in London since the Armistice.

### Church Damaged by Fire.

The parish church at Eastchurch, Isle of Sheppey, dedicated to All Saints, and built in the reign of Henry VI, was extensively damaged by fire on Friday last. The north-eastern portion of the edifice was chiefly affected. The organ was totally destroyed. Some oak beams in the roof caught alight, but the firemen managed to prevent their destruction. Villagers and aircraft men removed the pulpit, which dates from Elizabethan or Early Stuart times. The registers were saved, as also were the stained glass windows.

### Institute of Scottish Architects.

A meeting of the Council was held at 117, George-street, Edinburgh, on Monday, Mr. A. G. Heiton, vice-president, in the chair. It was resolved to continue the gathering of information regarding existing by-laws in connection with the compilation of a new building code. One fellow, three associates, and 25 students were elected to membership.

The members of the Council for the ensuing year were fixed at one president, one past-president, five vice-presidents, 14 chapter representatives, and three institute representatives.

### Obituary.

The death occurred from pneumonia, on Friday last, of Mr. J. Percy Rees, architect and surveyor, of 71, Covenny-street, Splott, Cardiff. He leaves a widow and two young children. The funeral took place at Llanfabon on Tuesday.

At the meeting of the Royal Institute of British Architects on Monday last, Mr. Arthur Keen (Honorary Secretary) announced the death of Mr. Frederick W. Marks, F.R.I.B.A.

It is with regret that we record the death of Mr. John Black Hector, Hon. Secretary of the Architects' and Surveyors' Assistants' Professional Union, which took place on Friday last, after a very short illness.

### Modern Building Exhibition at Turin.

The first exhibition held in Italy especially devoted to building will be opened in Turin on April 8, and will last to May 21. The exhibition will be held during the meeting of the National Congress of Italian Engineers and of the Association for the Study of Building Materials. It has been organised by a group of engineers, architects and constructors with the assistance of the Government and the local authorities of Turin. In addition to the exhibition of building materials and methods of construction, there will be a special annexe devoted to plans and models of buildings and of furnished houses. The exhibition will be held in the Stadium, corso Vinzaglio.

### N.E.R. War Memorial.

The Yorkshire Archæological Society have sent a letter to the York Corporation Estates Committee desiring that the city walls should not be unnecessarily interfered with by the erection of the N.E.R. war memorial at the foot of the ramparts, and that a general reduction in the scale of the memorial would obviate the necessity of encroaching on the mound at all. The City Engineer has reported that: "The total length of rampart to be lowered is 56 ft. It is the proposal of the Railway Company where the rampart is lowered, to underpin the city wall, and to face it with stone to match the existing wall. Grass slopes would, therefore, take the place of the present stone retaining wall now built at right angles to the city wall." The Committee have decided to offer no objection to the proposals of the company on the understanding that the Corporation's rights to the land on which part of the memorial is to be erected are reserved and that the company maintain the grass on the ramparts where altered.

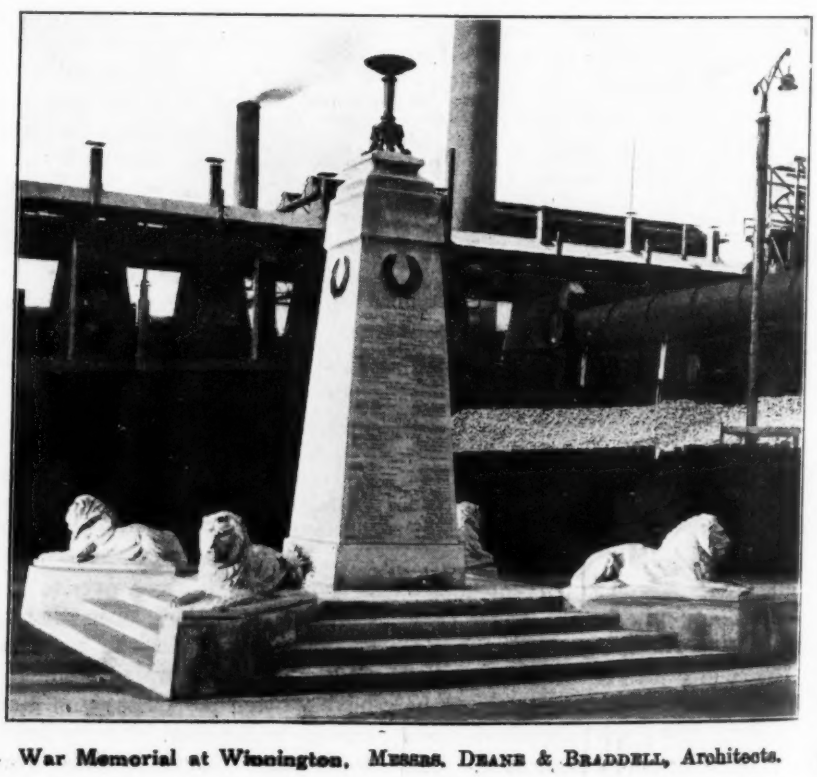
### The Beaux Arts Committee.

Since the establishment of the First Atelier of Architecture in London by the Beaux Arts Committee in 1913, the Honorary Secretaryship of the Committee has been undertaken by Mr. C. McArthur Butler, who has now relinquished it owing to the pressure of engagements as Secretary of the Society of Architects. His successor is Mr. Cart de Lafontaine, whose acceptance of the position will be regarded by all who are acquainted with his qualifications as a good augury for the further progess and development of the Committee's educational activities.

The work of the Committee and of the Atelier will continue to be carried on at 28, Bedford-square, W.C.1, and Mr. McArthur Butler's experience will be at the disposal of the Beaux Arts Committee, of which he remains a member.

## WAR MEMORIAL AT WINNINGTON.

Winnington is the chief of Messrs. Brunner, Mond's works, and this memorial bears the names of the dead (nearly 300) who had worked at all their works. The site is in the very heart of the works, surrounded by chimneys and retorts. It was felt that whatever was put up should be simple and large in conception, if it were not to be swamped by the surroundings. The four couchant lions are the work of Mr. Leonard Jennings, in Corrish granite. The obelisk is crowned with a brazier in bronze, which conceals a light for use on ceremonial occasions. This finial, with the four bronze wreaths—of oak, ash, thorn and laurel—are also the work of Mr. Jennings. Mr. Esmond Burton cut all the lettering. The architects were Messrs. Deane & Braddell, Old Quebec-street, Marble Arch, W. 1.



War Memorial at Winnington. Messrs. Deane & Braddell, Architects.

# COMPETITION NEWS.

### Auckland.

The second set of answers to questions in the Auckland War Memorial Competition gives the following information:—An unfortunate error occurred in the requirements as set out (1) in the Conditions, and (2) in the disposition of the various halls, etc., set out in the answer to question 7, in the omission of a hall required for foreign zoology. The answer to question 7 is amended by the insertion in the Schedule on the first floor of a hall for foreign zoology, 130 ft. by 60 ft. This Schedule requires amendment as to first floor accommodation by the addition of the hall described as the central hall or vestibule.

The following cable was received by the R.I.B.A. from the promoters on March 29:—

"Memorial Museum Competition, Major Axes, Maori Hall and Maori Court must be parallel. In halls where span requires intermediate support desirable two such supports placed approximately quarter span from adjoining wall. In main entrance hall, central hall, central war memorial hall and hall memories supports left discretion competitors. For memorial trophies and memories halls lighting system left competitors. Posting first mail final memoranda and answers questions. Designs due Auckland June 30, but owing irregularity mails will allow fortnight extension. Advise competitors."

On the same date the R.I.B.A. sent the following cable to Auckland:—

"Corrected conditions received London March 18th. Further answers expected middle April and middle May. Drawing must leave London April 26 to arrive Auckland June 30. Time for completion obviously insufficient. Committee emphatically request date for despatch of designs from London be fixed June 30. Please cable reply."

The following reply was received:—"Agree your request extension June 30 London, subject plans being shipped first mailboat thereafter."

### Other Competitions.

Other competitions still open include the following (the dates given are, first the sending-in date, and second the issue of *The Builder* in which full particulars were given):—Auckland war memorial (June 30; Sept. 2, 1921); Trujillo (Peru) monument (June; Jan. 13); Colour Competition (May 1; Feb. 17); Dundee war memorial (April 30; Jan. 6); Ipswich War Memorial (June 17, March 31); Newport War Memorial (May 1, March 31)—banned by R.I.B.A.

# CORRESPONDENCE.

### Registration and the Rights of Associates.

SIR,—May I ask for the use of a little space in order to refer to the letter on the above subject signed by the officers of the Defence League, and to reassure the Associates of the Institute as to their power of voting on the proposals of the Unification Committee? The letter has stated that "if the scheme of the Unification and Registration Committee were submitted to the full body of the Institute for approval, no Associate would have the right to vote, and Fellows alone would decide it." This statement is altogether incorrect. The matter before the meeting would be the proposals for a new Charter, and the Associates would have full power of voting on it. The By-laws would follow later, and they would have to come within the four walls of the new Charter. This Charter would almost certainly provide for Associates to have the power to vote on By-laws and thereby remove their only present disability. The Associates held and exercised in 1907 the power of voting on the Charter and they were exercising that power in 1914 when the war caused the Charter proposals to be suspended.

There is not the smallest need to put the Royal Institute to the expense of calling, and the members to the trouble of attending, a special general meeting, because the Council have already decided and have announced, long ago, the fact that any new Charter proposals that they may put forward will include the grant to the Associates of full power of voting on By-laws (see R.I.B.A. *Journal*, December 6, 1913). This principle was adopted at a general meeting which followed.

It is perhaps too much to expect that the officers of the Defence League should remember these facts before they make unguarded statements to the Press, but I cannot help feeling that those of them who were members of the Council at the time the action to which I refer was taken should verify their references before they spread needless alarm among the members of the Associate class.

ARTHUR KEEN,
R.I.B.A. *Honorary Secretary.*

### Unification and Registration.

SIR,—Mr. Buckland complains that the views of the Unification Committee have been misrepresented by us. Now for the facts. If Mr. Buckland will refer to the *Journal* for May 28, 1921, he will find a report of the meeting in question.

Mr. Gibson said, "The one scheme was that all architects who practised architecture, or earned their living by it, should become members of the Royal Institute."

Mr. McArthur Butler said, "Scheme A was the bringing of all architects in the Kingdom into the R.I.B.A. That means what it said, even if they had all the architects of the Kingdom in the Institute," &c.

The Chairman said, "The only question before us at the moment is the principle of bringing all the architects in the United Kingdom into the Institute."

Sir Charles Ruthen said, "He took it that the idea of unification was that all architects should belong to the Royal Institute. . . . They would all be members of the Royal Institute. . . . The Allied Societies would not be affected by unification, except in so far that those of their members, who were not now members of the Institute, would become so."

Mr. G. C. Lawrence said, "I understand Mr. Corlette's motion to mean that this meeting is to say that it is much to be desired that all architects should be members of one body—the Royal Institute." The Chairman then submitted Major Corlette's resolution to admit "all the architects of the United Kingdom into membership of the R.I.B.A.," and it was carried.

We submit we have not misrepresented those gentlemen; we have simply given them credit for having sufficient intelligence accurately to express their thoughts in words.

Such a scheme, as explained above, could have claimed to be called one for unification. But it must soon have been apparent to the promoters of it that the R.I.B.A. would never sanction such a proposal, so they "hedged," and stated that "all the architects" only meant all the qualified, or selected, or approved architects, and no others; and to call such a scheme unification is nothing less than a piece of impudence, and an insult to our intelligence.

The scheme of the Unification and Registration Committee was submitted to the Parliamentary Agents by us. It was explained at length, and they were pressed for an opinion as to the chance of our obtaining Registration if we carried out the scheme, with the well-known result. We have always maintained that the opinion of architects on this technical matter is not worth considering, and for architects to say the scheme is a "first step" to Registration in order to lead men to think that if we suspended our examination system and admitted men in large numbers that it would lead to Registration, is not worthy of our Council or any member of it.

With regard to obtaining Registration we gave an alternative scheme on Page 6 of the pamphlet issued by the League.

Mr. Grayson's statement that the recent propaganda "may have gained a recruit or two" to the R.I.B.A. Defence League, is very funny. May we give him our official assurance that he does not exaggerate?

Thank goodness, members of the Institute are beginning to think and act for themselves, and not simply submit to any proposal that may be passed by a majority of the Council. We hope Mr. Buckland, Mr. Grayson, and their friends will write to you again. That type of letter is just what we want.

ALFRED W. S. CROSS,
H. D. SEARLES-WOOD,
*Vice-Presidents, R.I.B.A.*
GEORGE HUBBARD,
SYDNEY PERKS,
*Hon. Secs., R.I.B.A. Defence League.*

### Summoning R.I.B.A. General Meetings.

SIR,—Mr. MacAlister is quite correct in his statement that the Council can call a special general meeting at any time, but there is only one way by which the ordinary members can requisition for one (see By-law 65). Ordinary members send in a requisition, and the Council calls the meeting. That the time for notice is short is not the fault of those who want the meeting; and in order that full notice can be received it was decided to write to you and state that the R.I.B.A. Defence League will requisition for a meeting in a few weeks' time to discuss a proposal to give Associates the same voting powers as Fellows. At that meeting at least 40 Fellows must be present; Associates can speak, but no Associate can vote, and a resolution will require a two-thirds majority to carry it. Consequently, Associates who are in favour of the proposal should appeal to their friends who are Fellows to attend in force and support their views.

SYDNEY PERKS.
London.

### Houses for £400.

SIR,—In a statement widely circulated in the Press, Sir Kingsley Wood, M.P., is reported to have said at a meeting which he addressed on March 29 that the cost per house had been reduced by one-half, and that tenders were being received at the Ministry of Health at less than £400 for a house of three bedrooms, parlour, and kitchen, and that it was expected that tenders would be still lower.

Will Sir Kingsley Wood go a little further and state where these houses are to be erected, of what material they are to be built and by whom, and whether they conform in all respects with the regulations of the Ministry of Health for the houses of the working classes?

My reason for asking this question is that architects' potential clients reading the statement referred to believe that it applies to the whole country, whereas in some districts, and probably in many, it is, I suggest, impossible to get houses of that accommodation properly built at the price quoted by Sir Kingsley Wood.

C. MCARTHUR BUTLER,
*Secretary.*
Society of Architects.

[Sir Kingsley Wood has written a letter to the Press on the above subject, a reference to which will be found on another page.]

### Art and Commercial Values.

SIR,—Mr. Creswell's references to my] letter under this heading do my qualifications for the expansion of the theme more honour than they deserve. But as existing conditions have arisen round the arts by the activity of those who make use of them, rather than as a result of any constructive action on the part of artists, perhaps you will allow me this little hospitality.

In striving to improve his position, I do not think the artist should be so afraid, as he is, of the personal dislike or of the pointed witticism that is regarded by feeble unprogressive men as a protective disguise for their own threadbare ideas. These are in every society, and at every gathering, a source of weakness; for if anything must be set in the forefront, it is the boldest and fullest recognition of the value of art. And not only must artists seek the individual advancement of their talents, but also, as members of their craft, loyally and energetically organise against the forces which threaten art on every hand.

It would be a tedious process to set forth the case against commercial aggression. I do not, therefore, propose to add much on that side; but, taking an impersonal view, may I be permitted a glance at the chief faults of the system (so-called) under which we suffer to-day? In the first place the centralisation of the arts in London does less than justice to the larger and truer conception of our splendid English tradition. By filling the town with fashionable and popular forms of art, and attracting the more worldly talents, a great disservice is done to the great provincial cities and to the only possible use of the capital as representative of the whole country and nation. Of itself and for itself a city has no tradition, unless we can suppose that the city clerk has suddenly been gifted with power to produce new forms of art. A city exhausts, but cannot replenish, any art. In the case of London, the signs of exhaustion of real motives are clearly evident. The newspapers wax nonsensically profound on the subject of painting, of painting alone, to the exclusion of a hundred arts and handicrafts and industries which have never depended upon that singularly vapid kind of journalism. A crowd of officials, experts, curators of public galleries, dealers and art-masters labour to fit art for the unstable judgment of connoisseurs, or for crude service in some trade which never shows a ha'p'orth of improvement for this parade of brainwork and salary. There is no simple self-contained method in use by which art can be at leave to be efficient and complete on its own grounds, although we may be certain that it can be of no service anywhere to the full unless it is first in possession of its own spirit. Instead, there are the schools, and the much-advertised quack systems by which fame and fortune are acquired without any interference either from artists or from the law. The operation of the commercial spirit upon the arts is to use and at the same time discredit them. We are elaborately impressed by the poverty of the artist, from whose brain and hand, none the less, vast prosperous industries spring. Dealers and publishers do very well. Theatres and galleries and halls go on from year to year. Armies of workmen week by week live on books, music, pictures, &c. Would it not be better frankly to accept the idea of commerce as an enemy, and make our own plans, in view of the fact that it is commerce that depends upon art, not art that depends upon commerce? JAMES GUTHRIE.

Bognor.

### Other Letters.

A letter by Mr. Price Davies on "The Analysis of Building Costs" is given on p. 534. Other letters are unavoidably held over

# ROYAL INSTITUTE OF BRITISH ARCHITECTS.

MR. PAUL WATERHOUSE (President) occupied the chair at a general meeting of the Royal Institute of British Architects, held at No. 9, Conduit-street, W.1, on Monday last.

## LONDON CLUBS.

After some preliminary business, MR. STANLEY C. RAMSEY then read a paper entitled "London Clubs," which buildings, he said, were amongst the city's most cherished possessions.

After some general remarks on the history of the clubs, he referred to several of them in detail.

### BROOKS'S.

Brooks's Club, St. James's-street, was, he said, one of those famous centres around which the brilliant social life of the latter half of the eighteenth century revolved. There was a distinct Georgian atmosphere about the place and the street which, in spite of the changes of the last 150 years, persisted to this day. There seemed to be some doubt as to who was the architect of the building. The land was conveyed to Mr. Brooks from Henry Holland, who had been credited with the design, though competent critics had ascribed the work to James Wyatt. There was a solidity about the early part of the club building, together with a handling of the detail, which was somewhat after the manner of some of the old houses in Hans-crescent and Chelsea, which, if Holland were the architect for these, would go far to establish him as the designer of Brooks's. The elevations had suffered from subsequent alterations, and the original character had been somewhat lost. Malton's view of St. James's-street, published in 1800, showed the façade in its original condition. There was then a projecting porch of four panelled piers, with a graceful iron balcony over, and the windows to the first-floor rooms had plain brick surrounds with gauged arches in place of the not too well designed pedimented tops and architraves of cement which now disfigured them. The old sash windows with the small panes had also been removed; the substitution of plate-glass gave the building a mid-Victorian appearance, and matters were not improved by the addition of the balustrade to the roof. The interior had had a much happier fate, so that much of its original charm remained. The large smoking-room on the first floor was a magnificent apartment. It had a splendid barrelled ceiling, and the ornament throughout was beautifully detailed and executed. The ceiling was divided into rectangular-shaped panels by flat bands of delicately-modelled guilloche ornaments, accentuated by the gilding, which was put on solid—the correct method of gilding for that class of work. From the centre of the ceiling hung a graceful candelabra of gilt metal and glass lustres, originally used for candles but now adapted for electric light. The period of gas, with the accompanying mid-Victorian fittings of unhallowed association, was passed over in disdainful neglect, and before the introduction of the present method of illumination nothing later than candles or lamps was used. The adjoining room—the strangers' smoking-room, formerly the dining-room of more stately days—was another beautiful chamber of a similar style and decoration.

### WHITE'S.

One of the most famous of the eighteenth-century clubs in St. James's-street was White's; but although important socially and historically, it had little architectural interest. The original house consisted of a plain three-story brick building with a Doric portico and a light iron railing over. In 1811 this doorway was removed and the celebrated bow-window from which Beau Brummell and Lord Alvanley, with their followers, quizzed the passers-by, was put in its place. The present front is the work of Lockyer, who remodelled the façade in 1850. The four bas-reliefs immediately under the main cornice were by George Scharf, junior. The result, though by no means a brilliant piece of architecture, was interesting as a Victorian essay in the eighteenth-century manner. The finest room in the club was the coffee-room. Probably the most interesting thing about White's, architecturally, was that Robert Adam, in 1787, prepared a scheme for what was practically the entire rebuilding of the club. If that had been carried out, White's would have been the finest of the eighteenth-century club buildings; but, alas! Adam's scheme remained a paper one. The original drawings might be seen in the Soane Museum.

### BOODLE'S.

Boodle's Club was on the same side of St. James's-street as White's, and almost opposite Brooks's. Of all the eighteenth-century clubs that remained it was the most complete both externally and internally. There was considerable conjecture as to the architect, but on the authority of Mr. Arthur Bolton (Curator of the Soane Museum) there was no evidence to connect the brothers Adam with it. But if Boodle's could not be described as the work of the Adam Brothers, it could quite safely be said that it belonged to the Adam School. The large three-light window on the first floor, expressive as it was of the fine chamber behind it, was probably one of the best-known windows in London. Its combination with the bow-window of the lower story was particularly successful, though the bow-window was added at a later date, probably by Papworth. The building remained to-day practically as it appeared when it was first built. The lower story and dressings were of painted plaster, the main walling being of ordinary London stocks, mellowed by age to a delightful tone. The interior has been almost as little altered as the exterior. Between 1821 and 1824 certain alterations were made by John Papworth, and probably it was he who added the rather uninteresting coffee-room at the rear. The finest room in the building was the large saloon on the first floor. Originally the gambling-room of the club, it was now simply known as the saloon. That chamber, and the two small saucer-domed apartments opening out of it, were arranged *en suite*. The ceiling of the saloon, which was originally painted, had now been covered with plain whitewash, to the undoubted detriment of the room; fine as it was now, it must have been still more impressive before the paintings which adorned the ceiling were removed. The face of the pilasters was treated with a fine arabesque, and the capitals, with their rich cluster of delicately modelled leaves, were good examples of typical "Adam" work. The doors were divided into panels enriched with a small guilloche ornament, which was both effective and original. The door opposite the large Venetian window was a particularly beautiful example, with its well-proportioned entablature and ram's-head pilasters. The panels immediately below the cornice of the saloon were modelled in low relief, and the only remaining expression of the painter whose work originally embellished the apartment was seen in the painted panel over the fireplace.

### ST. JAMES'S.

Of all the clubs in Piccadilly his favourite—architecturally—was the St. James's. Who was actually responsible for the original design of the building, which was built in 1761, he had been unable to discover. Certain features seemed to indicate Sir William Chambers as the author, particularly the treatment of the principal staircase giving access to the upper rooms. That corresponded, both in plan and detail, to a similar staircase which existed in Carrington House, Whitehall—now pulled down—and for which it was known Chambers was responsible. It must be remembered that the work of the architects of the eighteenth century was much more of one school than was the case to-day; and with the smaller and less important buildings, unless some clear record existed, it was extremely difficult, even after a close examination, to attribute them to any particular artist. Whoever's work it was the principal front was one of the most dignified and noteworthy façades in Piccadilly, and could more than hold its own when compared with more important and better-known buildings. It was a building of the late Palladian period, and was a delightful example of restrained artistry. The design might be said to be the last brilliant flicker of the old school, which was shortly to give place to the works of Adam and the later men. The ceiling of the front room on the first-floor (originally the dining-room, now the coffee-room) was an interesting example of Adam's earlier manner, which differed considerably from the more pronounced style of his later years. In the original drawing, which might be seen at the Soane Museum, the colouring was quite different from that which was usually associated with the name of its originator; it more closely resembled its Roman prototypes, on which Adam worked. The room immediately at the rear of the coffee-room—now used as a members' private dining-room, contained another beautiful Adam ceiling. Adjacent was a small octagonal room. Adam was particularly fond of small octagonal rooms, and the work here was equal to anything he ever did. Though built originally as a private house, the building was singularly well adapted for the purpose of a social club such as the St. James's, and it was happy in having escaped spoilation at the hands of the modern decorator, whose misdirected efforts had resulted in the partial or complete ruin of many similar buildings.

### THE UNION CLUB.

The Union Club was a link between the clubs of St. James's-street and those of Pall Mall. The present home of the club, forming, with the College of Physicians, a complete block of buildings on the west side of Trafalgar-square, was built from designs by Sir Robert Smirke, R.A., in 1822. The design was in the manner of the so called Greek revival, though why it should be called "revival," any more than the work of the Renaissance in Italy should be called Roman revival, it was difficult to say. But whatever criticism may be made of the term, it would be generally agreed that the leading men of the "Greek revival" made a considerable contribution to London—so considerable, indeed, that it was impossible to realise what the architectural aspect of the city would have been without them. Pre-eminent among them was the architect of the Union Club, and though individual works of his contemporaries might be finer in certain respects, his work, taken as a whole, was by far the most important that was carried out in London during the early part of the nineteenth century. Smirke's buildings were remarkable for the simplicity of theme, the skilful disposition of masses in elevation, and the subordination and scholarly treatment of detail. His chief weakness was his inability to grasp the broader significance of his plan. An instance of that was found in his design for the British Museum, in which the central pavilion, forming the most important feature in the main front, was merely the approach to a rather narrow entrance hall, which, in the original plan, gave access on to an open court-yard; the subsequent filling-in of this courtyard or quadrangle with the reading-room provided more reason for the emphasis of the entrance, but that was more in the nature of a happy accident than anything else. A somewhat similar error in first principles was evidenced in the block of buildings of which the Union Club formed part. The block, forming the side of a square open on three sides, should have been considered in relation to the design of the whole area, and the placing of the hexastyle portico which formed the entrance to the College of Physicians facing towards, instead of away from, the National Gallery, was, he thought, a mistake. The elevation of the Union Club towards Trafalgar-square was, considered by itself, a well-balanced and appropriate façade for its position. It was when they came to consider the direction which was given to it by ending the plan on the north side by the portico already referred to, and treating the foot of the plan in Cockspur-street with the bow-window

to the morning-room of the club—a charming feature in itself—that they realised that error in principle.

The design of the interior of the building was in some respects not equal to that of the exterior, particularly in the treatment of some of the detail. The entrance hall was quite plain, and had very little architectural interest. Beyond, and opening out of it, was the main staircase, with a simple balustrade of cast-iron crowned with a mahogany handrail, the sweeping lines of which were extremely graceful. The architects of that period had taught us, beyond all others, the correct use of cast-iron, and as an example of what could be done in that material one had only to instance the fine lamp standards on this staircase. The coffee-room occupied the central position on the ground-floor facing towards Trafalgar-square, which afforded a pleasant outlook for the four windows of that apartment. It had a well-detailed ceiling, with enrichments of delicate mouldings, and slightly raised Greek frets. Most attractive features of the room were the four cut-glass chandeliers, now adapted for the purposes of electric light, which beautiful fittings in themselves gave altogether a wonderful appearance of gaiety and glitter to the apartment. The morning-room, with its spacious bow-window overlooking Cockspur-street, was the glory of the club. It has probably the brightest and gayest outlook of any club window in London. The room was divided into three bays with scagliola columns, based on the order from the Tower of the Winds at Athens, though not nearly so well executed as the similar columns in the hall of the Athenæum Club. There were two chimney-pieces, one in each of the end bays. The design of these, however, was not very good; it would seem that Smirke had intended to be a little playful in their design, but the result was not far removed from the grotesque.

Sir Robert Smirke and his brother Sydney were also responsible for the Oxford and Cambridge Club in Pall Mall, which was built in 1836-37. It was interesting to note how many of the Pall Mall clubs were built within a few years of one another. Nash seemed to have started with the United Service Club in 1828; the Athenæum, by Decimus Burton, followed in 1830; then the Travellers', by Barry, in 1832; the Reform in 1837-38; and the Carlton in 1854. Comparing the Pall Mall Clubs with the Clubs of St. James's-street, one was at once struck with the more serious aspect of the later buildings. The Georgian tradition was dead, and the nineteenth century was in full swing. The Oxford and Cambridge Club had an imposing front towards Pall Mall, but the architecture lacked the purity of the earlier Union Club—architecturally it stood midway between that building and the Conservative Club, which was built by Sydney Smirke and Basevi in 1845. One of the most interesting features in the façade was the seven bas-reliefs executed by Nicholl, who was also employed on similar work at the Fitzwilliam Museum at Cambridge. Internally the club was chiefly remarkable for its library.

## THE UNITED SERVICE CLUB.

It would materially add to the already heavy burden of the average architect could he foresee the changes that would be effected in his buildings at the hands of others in future years. Sometimes the building was fortunate in being dealt with by a considerate and sympathetic designer, but in other cases the design only too surely suffered by later additions and alterations. That, to a certain extent, was the case with the United Service Club. Built by Nash in 1828, it remained to be altered and embellished by Decimus Burton in 1858, a proceeding which, judging from drawings that existed of the original fabric, must have robbed it of much of its essential charm. The members of that year, discontented with the somewhat severe and chaste lines of the exterior, called in Burton "to ornament and improve it." Burton consequently proceeded to do so with great gusto, though one could not feel that his labours were altogether happily directed. Fortunately, Decimus Burton's efforts at the United Service Club were chiefly confined to the exterior; the interior retained more of the true spirit of Nash. The present premises in Pall Mall were commenced in 1828 and completed by midsummer 1829. In the mass the building was still a fine and striking structure, and though there was something to regret, there was still much to admire. Internally the most impressive feature was the grand staircase, which must rank amongst the great examples of London. The plan was interesting and a little unique by reason of the position which the staircase hall occupied in the building. This was approached from the side by the main entrance in Pall Mall, through a small columned outer lobby, and the main staircase centred on the front of the Waterloo-place side, a fact which had led some to believe that the portico which originally occupied this side and was pulled down by Decimus Burton was used as an entrance from Waterloo-place. There was, however, no evidence of that, either in Nash's perspective or in the records of the club. Probably the chief purpose Nash intended the portico to serve was to balance the mass of the main portico, and to form a corresponding feature to the Athenæum porch on the other side of Waterloo-place. The library of the club, on the first floor, facing the gardens of Carlton House-terrace at the rear, and extending the whole length of that front, was a finely-proportioned room of generous dimensions. In the disposition of its parts it followed much the same plan as the libraries of the Reform and the Athenæum—it was divided into three unequal bays, with columns and entablature. It would seem that Nash was the originator of that type of plan for the larger apartments of a club, though doubtless prototypes of a similar character might be found earlier. Whoever originated it, this type of plan, with the three fireplaces, one in each of the end walls and one in the centre of the long wall opposite the windows, was particularly suitable for any room in which provision was desired to be made for the grouping together of individuals in an easy and comfortable manner

## THE ATHENÆUM CLUB.

On the opposite side of Waterloo-place was the Athenæum, erected from the designs of Decimus Burton in 1830, at a cost of £35,000. The architect was only twenty-seven years of age when he received his commission for the building, and it was doubtful if he ever built anything in later years of equal importance which so adequately represented his skill. Burton's work was chiefly remarkable for its refinement and restraint, for a feeling for fine though not original detail—qualities which were particularly well exemplified in this building. If anything, he would appear to have had a leaning towards Roman rather than Greek prototypes, though he designed many buildings in the fashionable Greek manner of his time. The exterior of the Athenæum was certainly more Roman than Greek, and, with the exception of the Parthenaic frieze (modelled by the Scottish sculptor John Henning), there was nothing on the outside of the building that in any way represented Greek architecture. A noteworthy feature of the exterior is the balcony dividing the two stories. The skilful treatment of this was particularly worthy of study. It was no mere affair of a ledge interrupting the vertical rhythm of the building, but had rather the appearance of growing out of the main walling, and the sweeping lines of the simple but strongly-marked brackets carried the eye upwards to the overshadowing cornice which protected the frieze.

A very good example of Burton's indifference to the rigid claims of style was seen in his design for the entrance hall of the club, which had a Roman barrel ceiling, richly coffered, supported by Greek Corinthian columns modelled on the well-known example from the Tower of the Winds at Athens. The effect of that hall, with the grand staircase on the central axis branching into two flights from the first landing—the approach in a subdued light, and the staircase brightly illumined by a large octagonal skylight placed centrally over it—was extremely impressive. The present colour-scheme, carried out under the direction of the late Sir Lawrence Alma-Tadema, was a most effective one. The columns were a golden-yellow colour, with solid gilt caps. The ceiling was cream, with slight enrichments in colour, and the walls were picked out in various shades of lemon-yellow. The marble dado to the staircase was put up about twenty years ago; it was finished with a Greek fret of a dark bronze colour, picked out with a thin silver line. Alma-Tadema was also responsible for gilding the statue of the Belvedere Apollo (a copy of the original in the Vatican) that occupied the recess on the landing at the head of the first flight of stairs, and for the design of the surround to the clock, which was a delicate interpretation of Greek ornament executed in bronze. The hall was altogether very harmonious in effect, and the club owed much to Alma-Tadema's wonderful feeling for colour.

The various rooms of the club are grouped symmetrically around the staircase. The coffee-room, on the ground floor, occupied the whole of the left-hand side and looked out on to the gardens of Carlton House-terrace. The ceiling of this room was divided into three bays, with a large and beautifully-enriched Greek circular centre-piece to each, from the middle of which hung the original fittings, designed by Decimus Burton, for oil lamps, now adapted for electric light. On the first floor was the finest apartment in the building, the drawing-room, a chamber of noble proportions occupying the whole front of the club. It was divided into three bays with coupled Corinthian columns, following much the same plan that Barry adopted for his principal rooms in the Travellers' and the Reform, and first employed by Nash in the United Service. The bays at each end were square on plan, and the central part, which was rectangular, had a large elliptical dome in the ceiling over. The chimney-pieces on the long wall and at each end, and the doors, were fine examples of Burton's feeling for crisp and delicate detail. The ornament might be Stuart and Revett's, but it was used imaginatively and to good purpose. The library was one of the chief glories of the Athenæum. The books were stored chiefly in the South Library, the walls of which were lined with books from floor to ceiling. The North Library is a smaller apartment on the opposite side of the club, while the drawing, smoking, and other rooms were also filled with books.

## THE TRAVELLERS' CLUB.

The Travellers', Pall Mall East, was built in 1832 from the designs of Charles Barry, for £23,000. It was one of the architect's first commissions, and his adoption of the astylar treatment in the manner of the earlier Italians, at a time when no building of any pretensions was considered complete without its columnar front, together with the beautiful character of the design, made this building famous. Less impressive in effect than the Reform, with its elevations finished in stucco in place of the more costly stone, it had nevertheless an appearance of elegance and distinction, and more than held its own when compared with either the Reform on its left or the Athenæum on its right. Barry might in a sense be said to be the father of our modern cosmopolitan architecture, that eclecticism of taste which, both here and in other countries, found expression in the direct application to foreign models for the purpose of expressing modern design. Although a comparatively young man when he designed the building, there was no sign of immaturity in the general scheme or the elevations, but the detail of some of the internal work was a little mechanical and lacking in interest, and was at times even slovenly. Barry, like most of his contemporaries, seemed to have profited to a much greater extent by the study of Italian exteriors than he did by that of the interiors.

The elevation of the club to Pall Mall was a masterpiece of quiet and forceful composition, the severely rectangular form, with the division of the upper and lower stories marked by the finely executed string-course, the regular espacement of the windows, the balance between wall surface and openings, the carefully s bor-

dinated doorway, the whole crowned by a cornice of well-considered dimensions and parts, made an irresistible appeal to the lover of the chaste and orderly. The treatment of the first-floor windows was particularly successful; the square pilasters covering the angles of the openings were, for many reasons, to be preferred to the three-quarter columns employed in the first-floor windows of the Reform, which looked as if they were partially buried by the main walling of the building. The rear façade, facing Carlton House-terrace, was much more original, though not less beautiful.

The plan of the building was quite as interesting and as well deserving of study as the elevations. On the ground-floor front to Pall Mall was the morning room, a pleasant and well-proportioned apartment. The smoking room, originally the coffee room, occupied the whole of the ground-floor front to the gardens of Carlton House-terrace. The first-floor rooms were approached by an impressive looking staircase, which, by the skilful arrangement of the architect, was far more spacious in appearance than in reality. The most striking apartment on this floor was the library, of the same dimensions on plan as the smoking room beneath. Divided into three bays by delicately detailed Corinthian columns, with the windows looking on to the gardens of Carlton House-terrace, and the pleasant effect of the white tones of the decoration and the shelves of vellum-backed books, that room had a most delightful appearance, reminding one of a secluded college library. The Pall Mall front of the club on the first floor was taken up by the coffee room. This was originally divided into two rooms by a partition and folding doors, which formed the card room and drawing room.

## THE REFORM CLUB.

An open competition for the design of the Reform Club was held in 1837, when Barry—in preference to Blore, Basevi, Decimus Burton, and C. R. Cockerell—was awarded the first place, and received the commission. The responsible members at that time had generous notions concerning their building, and they set an example which might with advantage be more frequently followed by modern committees. They commissioned their architect to build "a larger and more magnificent house than any other," in face of which incitement to excel Barry displayed a notable restraint in the handling of his design, so that, in a street of modern palaces, the Reform more than held its own for stateliness of conception and dignity of treatment, and yet was notable above all for its extreme simplicity and repose.

The front to Pall Mall, with its rhythm of plain wall surface and regularly spaced windows, undisturbed by any extraneous additions in the shape of columns or pilasters, with its frowning cornice of majestic dimensions, its outer guard of protecting parapet walls, and the finely-detailed lamp standards, had such an appearance of splendid solidity that the doorway, beautiful as it was, was at first sight felt to be almost an intrusion. The treatment of that doorway was one of the greatest difficulties that Barry experienced in the working out of his design. He considered, and rightly, that a porch treatment would be altogether out of place, and though in deference to the suggestions of critics he tried various columnar and pilaster treatments, all of which he felt were too disturbing to the uniformity of his front, he finally abandoned them in favour of the direct simplicity of the executed design.

Barry had been frequently charged with copying the Farnese Palace, and though the great difference between the two buildings had been pointed out, there was a certain truth underlying the contention, which had been badly expressed in a general charge of plagiarism. The real genius of the architect was shown by the selection for his study of that period of the Renaissance which was most expressive of the dignity of the private citizen, as seen in the palaces of Rome and Florence, one of the most easily remembered and impressive of which was the Farnese. Though the memory of the Farnese might perhaps have inspired Barry, a critical observer with a knowledge of both buildings would no more accuse him of plagiarism that he would accuse Inigo Jones of having copied one of Palladio's buildings in his design for the Banqueting Hall in Whitehall. From the study of the palaces of the mid-Renaissance period, Barry, by a wonderful transmutation, achieved a building as distinctive in its individuality and as expressive of its purpose as any of the works of San Gallo, Peruzzi, or Michael Angelo. His example had been widely followed both here and in America, and in a sense he might be said to be the originator of the great modern club. McKim's design for the University Club in New York might be cited as a recent example of a similar treatment.

In the original plan for the Reform Club the central portion of the interior was occupied by an open Italian cortile, but in carrying out the work that was roofed in, and in its place was the magnificent central hall, 56 ft. long by 50 ft. wide, with its two colonnades, the upper Corinthian and the lower Ionic. The roof of that hall was formed of narrow diagonal ribs of iron with glass let in between, giving an ample and well-distributed light, while maintaining the character of the design. That central space was not obtained without some sacrifice. The provision of such an area usually necessitated some curtailment of the grand staircase, and that was true of the Reform, though it was a peculiarity of Barry's plan that he always reduced his staircase to somewhat modest dimensions, as if he feared that the undue importance of this feature might detract from the dignity of the whole. The Reform Club showed more clearly perhaps than any of Barry's other buildings that wonderful balance which he maintained between practical requirements and artistic expression. The plan had a directness and simplicity of treatment which it would be difficult to improve upon, particularly with regard to the axiality of the corridors and entrances to the various apartments and the espacement of the windows, which had been as carefully considered in relation to the different rooms they lighted as in the external elevations. On the ground floor was the spacious coffee-room, running the whole length of the south front. The colour scheme was gold and cream, and the detail had a fresh crispness and a Greek delicacy somewhat reminiscent of the work of Peruzzi, though not equal to the latter in surface values or actual knowledge of form. The room over, of corresponding size and proportions, was the club library.

## THE CONSERVATIVE CLUB.

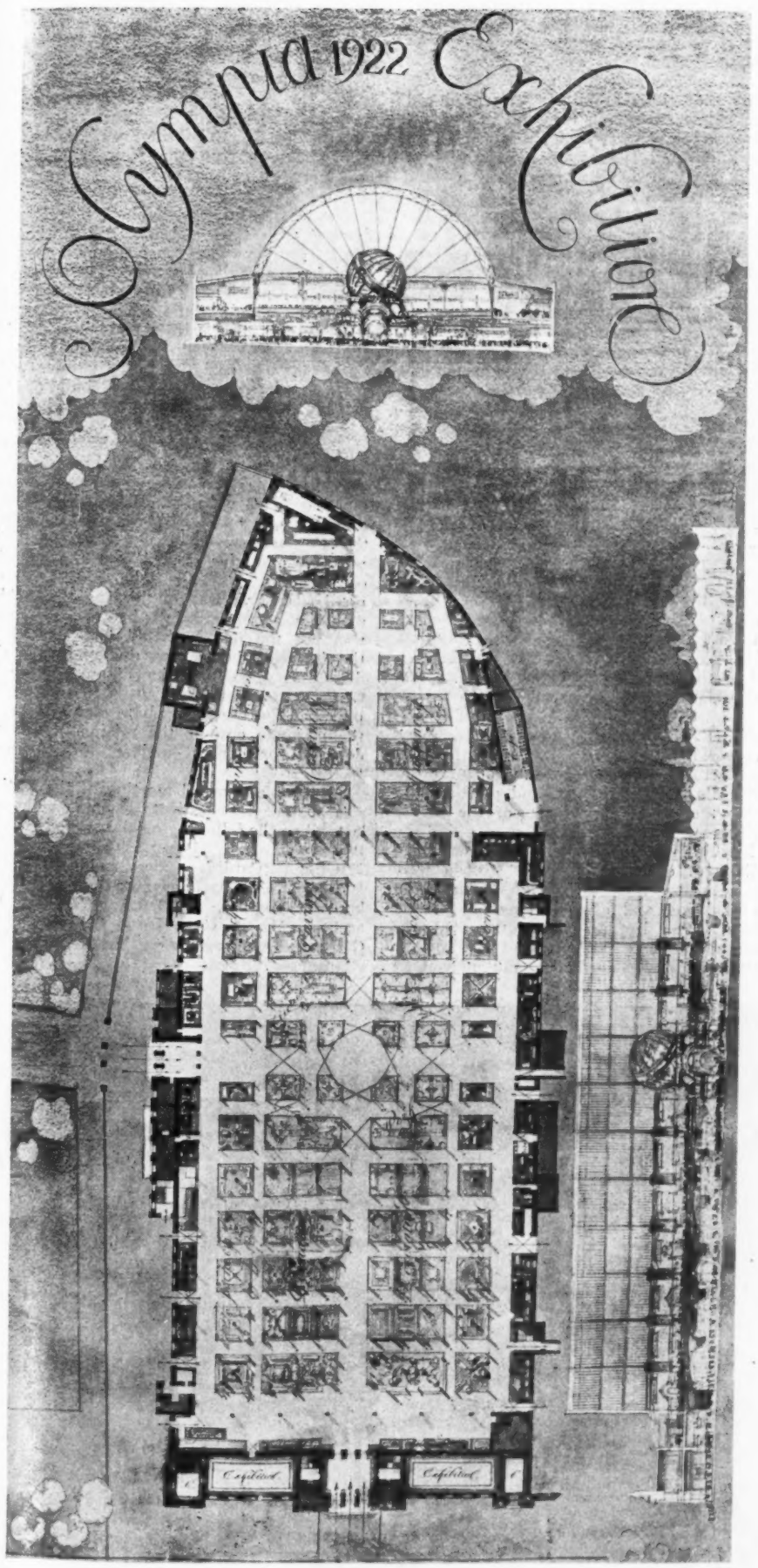
The Conservative Club, though in St. James's-street, in design and character belonged to the Pall Mall group. It was a typical building of the early Victorian period, exhibiting, as did most of the works of the architects of that time, a curious fusion of Greek and Italian *motifs* with a good, strong dash of Roman. The majority of the early Victorian architects had been educated in the severe school of the Greek revival, and, as if chilled by the frigidity of this atmosphere, they turned away to warm themselves at the fire of the Italian Renaissance. Occasionally they burnt their fingers. The design for the Conservative Club was the joint work of George Basevi and Sydney Smirke. Basevi was probably one of the first English architects to appreciate thoroughly the genius of Peruzzi. It is recorded of the design for the Conservative Club that the exterior was the joint work of both architects, but that the interior decorations on the ground floor were exclusively finished from Basevi's designs, and the first floor from those of Smirke. The elevation towards St. James's-street was divided into two stories, the lower or ground floor being of plain ashlar with rusticated joints and square-headed window openings, and the upper or first floor being divided into bays with three-quarter Corinthian columns attached to the walls, and separated from the ground floor story by a projecting balcony carried on brackets. The façade was divided into three parts, the two end portions being treated as slightly projecting pylons with flat pilasters engaged to the wall surface by means of quarter pilasters. The central part was divided into five bays at first floor-level, with the Corinthian columns referred to above, each bay being filled with a rectangular window-opening finished with a straight pedimented head. The end or pylon bays are treated with three-light windows, the central part having a corresponding pediment to the windows of the intermediate bays. The treatment of those three-light windows, though a favourite *motif* of the architects of that time, and one which was used much by Pennethorne and others, could not be altogether commended. Bridging in as it did the whole of the space between the pilasters, and carrying a great depth of unpierced stonework above, crowned with a rather heavy blocking course and balustrade, it had an appearance of weakness.

On the ground floor of the pylons, at each end of the façade, were two projecting porches of the Doric order, the one on the right hand serving as the entrance to the building, and that on the left being filled in with a projecting bow-window. The treatment of those two end or pylon bays was the weakest part of the whole design. The attachment of the porches to the main structure was very unhappy, and the wholly unnecessary effort after symmetry, which had resulted in the filling-in of the one with the bay-window referred to, largely detracted from the good appearance of the front. Though in no way comparable to the Reform Club, the elevation of the Conservative was a sober and dignified piece of work.

The plan of the club was in no way a remarkable achievement. There were two halls, an inner and an outer, and beyond the inner hall was the main staircase. The inner hall proper was a circular apartment, extending up through the two floors of the building and covered over with a glass dome of simple but good design. The lower part of the hall had a series of arches decorated in colour somewhat after the manner of the Raphael arabesques. This work was painted by Mr. Sang, by whom, after long years, it had since been decorated. The design for the lower part of the hall, together with the morning room and the coffee-room, were from the designs of Basevi. The entrance vestibule, opening directly on to the street, was an essay in the use of the Doric order, and was probably one of the best portions of the interior. The coffee-room was a finely proportioned apartment, the appearance of which was rather spoilt by the filling-in of the windows with obscured glass in the form of lead-glazing. The pendant fittings in that room were particularly good; they were the original oil lamps, adapted for use with the more modern electric light. The morning room had rather an interesting ceiling, in which one might note the effect of the freer influence of the Italian school in the light festoons framed by the severe lines of the Greek fret and the large circular moulding (of rather coarse detail).

## THE CARLTON CLUB.

To return to Pall Mall, the next club to engage attention was the Carlton, of which Sydney Smirke was the architect. Built in 1854 in the Italian manner favoured in the 'fifties of last century, at a time not usually considered to be altogether favourable to the finest expression of the arts, it was nevertheless an exposition of a very complete and definite idea. The Carlton and its immediate neighbour, the Reform, were both due to direct Italian influence; but whereas Barry sought inspiration from the Farnese Palace at Rome, Smirke took as his model Sansovino's library at Venice, and it was their different choice of *motifs* that explained much that was of peculiar significance when comparing the two buildings. The work of San Gallo at the Farnese was, together with that of Peruzzi, much more akin to the Greek than that of Sansovino and Palladio, which was essentially Roman in spirit. The transition from the Greek tradition of the elder Smirke and his contemporaries to the Italian of Barry was natural and quite comprehensible; there were many similar qualities which were inherent in both styles of building; there was the same breadth and simplicity of treatment, together with the same careful consideration of detail. The change from the "Italian" of 1836 to that of 1850 was really much greater and more violent,




**Royal Academy Ateliers Building Exhibition Lay-out Competition.**

Third Premiated Design, by Mr. S. Natusch. (*See p.* 515.)

when the spirit rather than the concrete expression of the design was considered. The quality of reticence then gave way to that of display, and it was not surprising to find that the sculptor-architect Sansovino, with his love of magnificence and ornate decoration, was followed in preference to the less showy but more capable men who served as tutors to Barry.

The plan of the club is a great advance on the plan adopted by the same architect for the Conservative Club. Entering from the Pall Mall front, one passed through a vestibule, up a short flight of steps, into a large square hall, which extended through the two stories and had an octagonal opening with balustrade around at first-floor level. The grand staircase led up from the inner hall, facing and on the same axis as the entrance door. On the left-hand side of the hall was the morning-room, a spacious and dignified apartment with five windows to the side street leading to Carlton House-terrace, and four overlooking Pall Mall. The writing room, opening off one corner of the inner hall, was a delightful apartment; its cream-coloured plaster-work, oak window surrounds, and red hangings constituting a very mellow combination; it was a room that formed a welcome retreat from the rather too impressive appearance of the rest of the building. On the right-hand side of the entrance hall was the magnificent coffee-room, probably the finest interior that Sydney Smirke ever designed; it was 90 ft. in length, with a width of 36 ft., divided into three bays by coupled Corinthian columns and pilasters having shafts of green marble.

### THE ARMY AND NAVY.

On the opposite side of Pall Mall to the Carlton was the Army and Navy, at the corner of King's-street leading to St. James's-square. Externally, he considered this was one of the finest club-houses in London. It was built in 1848 from the designs of Messrs. Parnell and Smith, who adopted as their model the Palazzo Rezzonico at Venice. The interior of the club was a little disappointing, the decorations being based on a rather free interpretation of Victorian Baroque.

### THE ROYAL AUTOMOBILE CLUB.

A modern club in Pall Mall—the Royal Automobile, by Messrs. Mewes and Davis—marked a definite break with the old form of club-house and inaugurated a new era in club design. In effect, the Royal Automobile Club was something more than a club, and had some of the characteristics of an hotel—it was the largest of all the London clubs; in fact, he believed it was the largest club building in the world—and, architecturally, he thought, it quite held its own when compared with any of its distinguished neighbours. When it was first erected the French character of its design was somewhat severely criticised as being out of place in a street of Italian palaces. But if they accepted the fact, which he thought could scarcely be denied, that it was French architecture that had been the dominating influence in the design of the public buildings erected in this country during the first quarter of the present century, then the Royal Automobile Club was as true an expression of our age as were the Anglo-Italian buildings of the Early Victorian.

The paper was illustrated by numerous lantern slides of the clubs referred to.

### Discussion.

The Right Hon. Lord Justice Warrington, in moving a vote of thanks to the lecturer, said, in his opinion, the buildings of the eighteenth century were by far the most attractive of those shown on the screen, and he would give the palm to the St. James's Club. Of the club buildings of a rather later period the most attractive to him was the Travellers'; the simplicity and beauty of its façade, especially of its "rear front," seemed to characterise that club. One thing which struck him as a defect in the original design of the United Services Club was the portico on its western front, which had no meaning at all, and seemed to be an excrescence; whereas the portico of the

Athenæum was a dignified entry to the dignified building. Compared with those earlier buildings the Carlton Club showed a great deterioration in design, but it was a great comfort to see that the building of the Automobile Club was going back to the simplicity and plainness of the earlier period, and perhaps that was a good augury for the future.

General Sir Henry MacKinnon, G.C.B., K.C.V.O. (Chairman of the Travellers' Club), seconded the vote of thanks.

Mr. A. J. Davis, in supporting, said there was one thing he would like to mention. In late years there had been a great transformation in clubs, and the plans of modern clubs were far more complicated and had to deal with a great many more requirements than were necessary in the old days. In the eighteenth century, and even in the early part of the nineteenth century, a club contained very few rooms; most of them were large public rooms, and the service and requirements were very much simpler than they were at the present time. Further, modern clubs had to deal with all sorts of new developments that made the plans most difficult and complicated. The display of taste, he thought, was far greater in the eighteenth century than in the nineteenth century, and it was to be hoped that in the future greater simplicity would be shown. He did not think that a great many new clubs would be built in London, as funds were difficult to obtain, but it was possible that old buildings would be converted instead of being pulled down. There were many fine private buildings to-day that could be converted and made into very satisfactory clubs.

Mr. F. R. Hiorns also supported, and said that what was an interesting feature about what the lecturer called the "Pall Mall group of Clubs" was that they were distinctly representative of Italian architecture. He thought the clubs offered a very great opportunity for an architect, because as far as the early 18th-century clubs were concerned the conditions of planning were relatively simple and their nature required that they should be treated in a refined way and with great dignity. The view that one got of Pall Mall from near the Duke of York's column was more suggestive of imperial Rome than anything he knew of in London, and, to an architect, it was a great source of delight to view those stately and dignified buildings. If it was true, as Emerson said, that "conversation was the laboratory and workshop of the student," then they would always require clubs that would offer an opportunity for persons to sharpen their wits upon one another, and if it was also true that architecture was a very important part of their environment, as he thought it undoubtedly was, it was only right and fitting that the use of a club to stimulate and enable them to enjoy conversation should be associated with the finest and noblest aspect of architecture. He was sure that those architects who produced the fine series of buildings they did in the first half of the 19th century undoubtedly felt that that was so, and they were a collection of buildings of which they had every reason to be proud.

In putting the motion to the meeting, the President said the Carlton Club suffered very terribly from the skin disease which had been on it for many years past in the unfortunate choice of stone. It had been a standing warning to architects not to use that kind of stone, which certainly had a very depressing effect on what, in his opinion, was a very fine design. In connection with the Automobile Club premises, by Messrs. Mèwes and Davis, he was struck by the plan, which showed that modern architects made child's play of the modern requirements; but he did not think it could be argued from that that the old type of plan was obsolete.

## SOUTH WALES INSTITUTE OF ARCHITECTS.

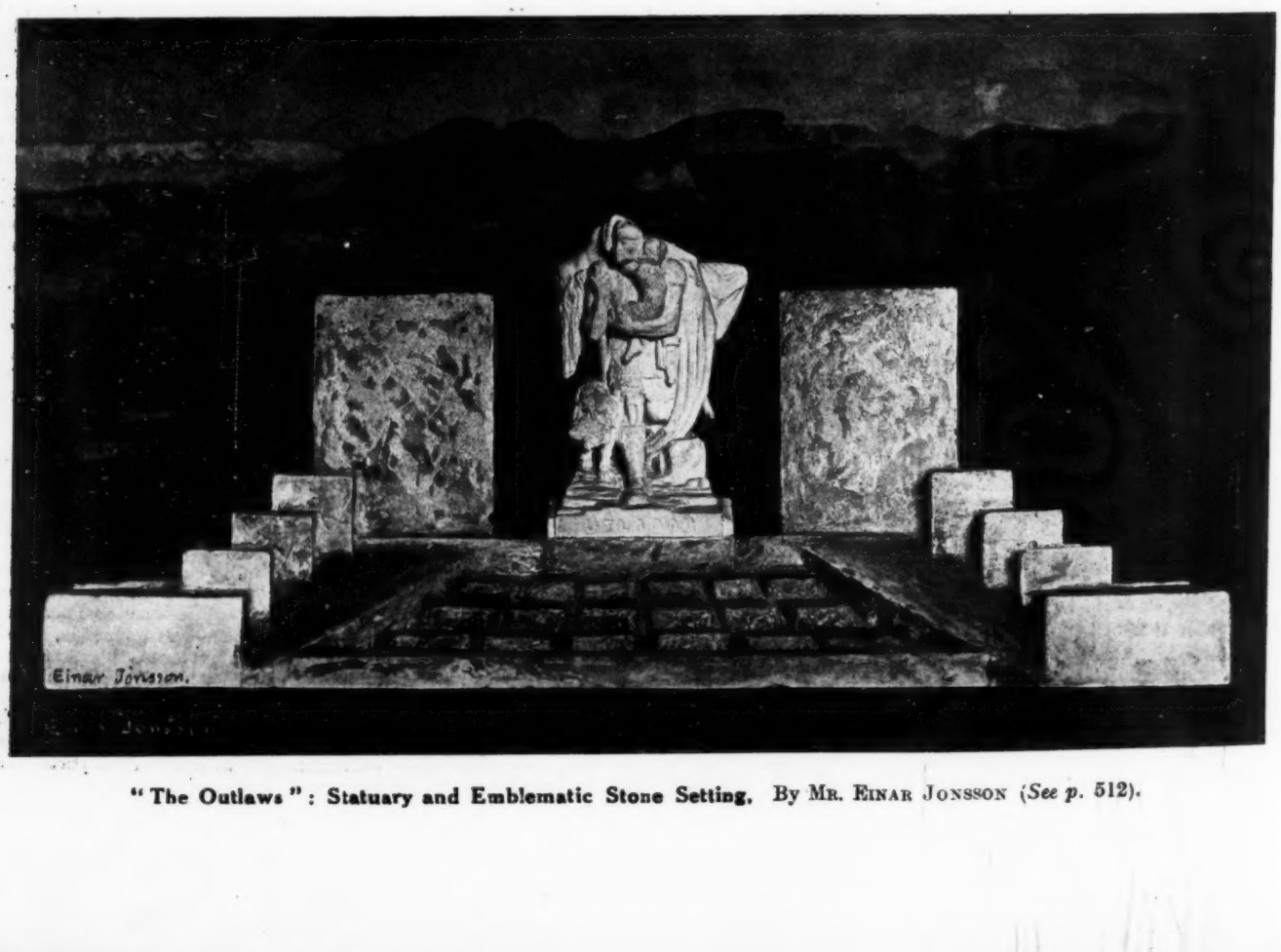
Under the auspices of the South Wales Institute of Architects, a lecture was given in the Cardiff Technical College on Friday last by Mr. W. S. Purchon, M.A., A.R.I.B.A., Head of the Department of Architecture and Civic Design in the College, on "Architecture and the Citizen." Mr. Percy Thomas, O.B.E., F.R.I.B.A., President of the Institute, presided.

The lecturer opened with a brief survey of the world's great buildings, and proceeded to indicate the great traditions of the art of architecture, its higher significance, and its relationship to the people. Two or three buildings of each of the great periods were dealt with, together with some examples of town planning and of well-designed railway stations. The lecturer then attempted the somewhat difficult task of explaining the Greek and Gothic Revivals, the movement initiated by George Devey, Norman Shaw, and others, the New Art Movement, and the introduction of Neo Grec. He referred to the useful work which has been done by architects in improving the conditions in factories, and cleared away some of the misunderstandings as to the part played by architects in housing work, showing how the English architect, by working from our fine traditional types, has established his supremacy in this particular sphere of architectural activity, and that in recent housing work he has done much in improving the plans and external treatment of houses and the general layout of housing schemes.

The comparatively haphazard method of dealing with town development in the nineteenth century was touched upon, and the need for the regional survey as a preliminary to the preparation of town-planning schemes was emphasised, while some of the special requirements of Cardiff were indicated. After discussing the well-known buildings in Cathays Park, and the Fire Station, Cardiff, various recently constructed buildings designed by eminent architects in other cities were dealt with.

The lecturer went on to refer to the growing need for an increased public interest in architecture, and mentioned that, at a recent meeting of the Cardiff Public Works Committee, the question was raised as to whether the Corporation could not frame a by-law which would give control over the elevations of buildings. "While," he said, "this may not be the best way of tackling the problem, and the example selected for condemnation was not the one I should have picked, yet the interest shown was a step in the right direction. The formation of an Advisory Art Committee to deal with such matters is, perhaps, the best immediate step to take, but the ultimate cure is the raising of the standard of the general understanding of architecture."

The annual general meeting of the Institute was held at the Institute Rooms on Thursday last, when the following officials were elected:—President, Mr. Percy Thomas, O.B.E., F.R.I.B.A. (Cardiff); vice-president, Mr. C. F. Ward (A.R.I.B.A. (Newport); hon. treasurer, Mr. H. Teather, F.R.I.B.A. (Cardiff); hon. auditor, Mr. J. Cook Rees, O.B.E., F.S.Arc. (Neath); hon. secretary, Mr. Ivor P. Jones (Cardiff).




**"The Outlaws": Statuary and Emblematic Stone Setting.** By Mr. Einar Jonsson (*See p.* 512).

# OBSTRUCTIVE BY-LAWS.

BY MANNING ROBERTSON, A.R.I.B.A.

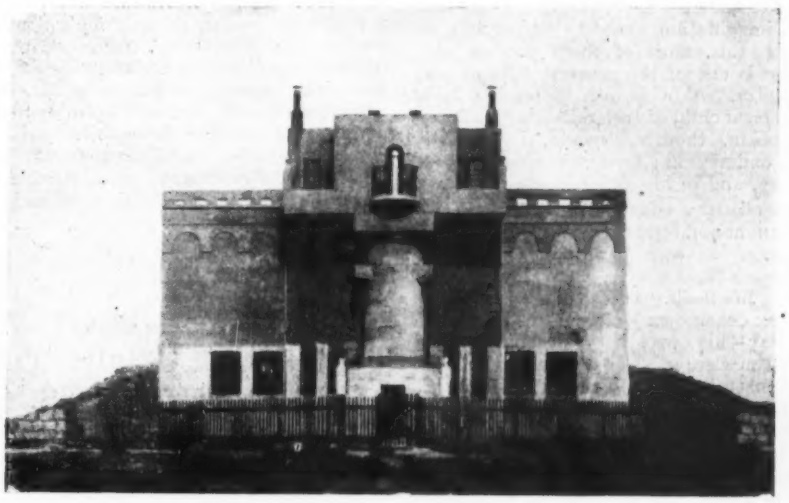
On July 31 next the provision for the relaxation of by-laws, contained in Section 25 of the Housing, Town-Planning, etc., Act, 1919, will expire, and we shall once more be at the mercy of by-laws many of which are futile, capricious, and obstructive. Section 25 gave power to local authorities to waive by-laws in accordance with regulations made by the then Local Government Board, whose functions are now vested in the Ministry of Health, and the section provided for appeal to the Board in the event of neglect or refusal on the part of the local authority to give such consent. This relaxation was welcome, and nothing more could have been expected of an Act passed in a hurry, but it was clumsy in operation, and as a permanent measure it would not have gone nearly far enough. The officials employed by a local authority are no better and no worse than any other set of men, and where they entered into the spirit of the Act all went well; but sometimes the officials adopted a hide-bound reverence and affection for the book of by-laws, and refused to grant any latitude until compelled to do so. In such circumstances the average man gave up the struggle, while the man who persevered with an appeal to the Ministry, and all the correspondence and formalities that this inevitably involved, was burdened with considerable expense and an enormous waste of time.

We have seen that the law, when it says something obviously silly, saves its dignity by tracing its origin to King Ina of the West Saxons, and if we could show, for example, that the provision of projecting brick footings to cottages was originally inspired by King Ethelred the Unready we might thus save our faces; but we cannot excuse our follies here by taking refuge in antiquity. In some districts the by-laws date from the 'sixties, in others from 1877, but they generally date from 1885 to 1900, all of which periods were governed by needs quite different from those existing to-day, and—let there be no mistake about this—in a case where local interests are prejudiced by hampering restrictions, the local authority concerned is the only body, under the law as it stands, which can take effective action in adopting a new and up-to-date model.

By-laws are not the only source of trouble, as there are no less than three other ways in which restrictions can be imposed, but the by-laws are the principal offenders. These four methods of control are so much interlaced and mixed up, so involved in their working, that it is by no means infrequent to find local authorities unwittingly making use of powers that they do not in reality possess, and there is urgent need for a revision in the law to co-ordinate and simplify the present procedure. There is nothing more difficult than to frame rules that allow latitude to the honest man, and at the same time prevent work from being scamped by the unscrupulous; but that can be no reason why we should rest content with by-laws that miss the main points, such as the overcrowding of dwellings and the provision of light, and often force us into heavy and quite unnecessary expenditure in other directions. To give a local authority power not to insist on something unnecessary is not the same as to rule out the unnecessary requirement altogether. A law that forbids Smith to steal Brown's umbrella is not the same as a law that gives Smith permission to refrain from stealing it, and consequently a mere continuation of the Section 25 powers beyond next July will not be sufficient, except as a stop-gap while a thorough revision of the system is being worked out.

The most clogging requirement under the by-laws refers to the width and construction of roads; no account is taken of the use to which a given road will be put, and development charges are in consequence so heavy that, on this ground alone, adequate housing is impossible. The provision of brick footings to cottages has already been mentioned; footings obviously have no value (except as money absorbers), and in the interests of economy the Ministry of Health forebade them altogether in Government houses, and yet they are still required by the by-laws. To tabulate obstructive requirements would be a long task: some are merely obsolete, such as those that, in effect, rule out hollow walls and new methods of construction, concrete, and terra-cotta, or that which prevents the insertion of a gas flue in a party wall. Others make no allowance for the conversion of existing buildings; a perfectly dry old outhouse or stable cannot be converted into a dwelling-house without the insertion, often at prohibitive expense, of a totally superfluous dampcourse. Opinion is divided on the question of room heights, but it is hard to find any sense in a local regulation that makes a man build his rooms nine feet high when he wants them to be eight feet; also, incredible as it may appear, in many districts the by-laws require cottage walls to be 13½ inches thick.

In 1914 the President of the Local Government Board appointed a Departmental Committee to report on the subject of building by-laws. The report, delayed by the war, was not published till 1918 (Cd. 9213); it was then duly put on one side, and nothing further has been heard about it. The report refers not only to unnecessary requirements but to gaps which are in urgent need of attention, such as the anomaly that, although by-laws can be made to secure ventilation in new buildings, they cannot require lighting; this is an urgent matter, as our system of back extensions could never have arisen had light been taken into account. Some of the points raised are of an entertaining nature; for example, the by-laws require flushing cisterns for water-closets, and also the provision of water, but no by-law can be made to secure that the water shall be brought into the cistern! Hence all lawful by-law requirements would be satisfied by an empty cistern and a bucket full of water.



**Einar Jonsson's Home, Studio, and Museum, at Reykjavik.** (*See p.* 512.)

An attempt was made in the Housing, Town-Planning, etc., Act, 1909, Section 44, to ease matters by stating that when the Local Government Board was satisfied that the erection of dwellings for the "working classes" was being unreasonably impeded the Board might take action to get the impediment removed (it appears here to be assumed that it is quite in order for other buildings to be "unreasonably impeded"). This has never worked at all and, under such wording, never could work; but a satisfactory amendment to this clause was proposed in the Committee's report. There can be no doubt that had the Committee's main recommendations been adopted our present position would be more satisfactory.

The relaxation in Section 25 of the 1919 Act has been a curse in disguise, for it has blinded everyone to the true conditions existing all the time in the background. The principle of local government in such affairs is recognised in this country, but it implies a considerable degree of local responsibility. While the average local authority is, no doubt, anxious to progress with the times, those who are not disposed to move cannot well be forced to do so, except by local pressure. Any local authority can get obsolete or obstructive by-laws removed if it so desires, and it is therefore the business of those interested locally to make their presence felt when they find themselves faced with unreasonable demands.

# EINAR JONSSON: SCULPTOR

By E. W. Richardson.

It may seem strange, at first sight, to those accustomed to think of Iceland—that remote, half-desolate, isolated island of the North Atlantic—in terms of volcanic soil, farming, and fishing, that it should produce great original artists and thinkers; yet that it has done so is shown by the work of that sculptor, so original, so individual, Einar Jonsson. Among the inhabitants of this volcanic, and, in parts, beautiful island, some of the scenery of which is almost of a grandiose nature, living in the proud memory of the mighty Saga period, a lively and vigorous imagination might naturally be postulated; this, most of them possess, and imagination is one of the greatest gifts of this gifted sculptor. As a Danish writer has said, he is "a typical child of Icelandic imagination." His symbolism, though stressed, is yet not difficult to understand; for he has always something to say, and in his sculpture he says it.

Untrammelled by convention, unfettered by accepted canons and forms of art, Jonsson's work is built upon his own philosophy of life—a philosophy which, he says, comes to him as naturally as life itself. Discarding all so-called "artistic tendencies and styles," he works in only one way—his own: if the accepted "laws of art" at times enter his creations it is because they happen to harmonise with his ideas; his work, he confesses, is built upon his own artistic laws, and not on those of others. The connection sometimes found between the legendary history of Iceland and the realms of fancy and his art is for him merely an external, an incidental, one; he uses it sometimes as a medium, an outer vehicle for his inner thoughts. True, he takes types, personalities, and peoples for his subjects, but he treats them all in his own distinctive manner. One of his best-known pieces is a statue of Thorfinn Karlsefni, the first white settler in America, and of his wife and child, Snorrei, the first white man who, so far as is known, was born in America, which country was discovered by Icelanders centuries before Columbus re-discovered its shores.

Einar Jonsson was born on May 11, 1874, the son of a well-to-do yeoman, and until his eighteenth year he lived on the land. But his artistic taste early developing, he then went to Copenhagen to study at the Royal Academy of Arts. Afterwards he travelled in Germany, Austria, Italy (spending a long time in Rome), Holland, England, and, finally, America, where he lived for over two years. Only recently has he settled down in his native land, living near Reykjavik, the capital of Iceland, in a house erected with the help of admirers and of the Government. This building is also intended to house a museum of Icelandic art, beginning with an installation of Mr. Jonsson's own sculptures. It is intended later to add wings to accommodate examples of the native art of the future. As will be seen from the illustration of the house, studio, and incipient national art museum, erected from the artist's designs, the building is decidedly exotic, quaint, and, to English eyes, somewhat *bizarre*. But, internally at any rate, it admirably fulfils its various purposes, whether as an art gallery, a sculptor's atelier, or a dwelling-house. It is constructed of concrete, being one of the few important buildings in Iceland to be made of this material. A large proportion of Mr. Jonsson's work consists of decorative panels and pieces suitable for open-air displays, for public monuments, and the embellishment of buildings. Apart, therefore, from its own intrinsic interest, the art of this original, imaginative, and typically Icelandic sculptor must possess a claim to notice and sympathy.

# NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS.

The inaugural dinner of the Norfolk and Norwich Association of Architects was held at Norwich recently, Mr. E. T. Boardman, President, being in the chair. The President of the Royal Academy (Sir Aston Webb) was the principal guest.

The President said that some eighteen months ago a rather loose organisation was established consisting of the Norwich members of the Royal Institute of British Architects, but under the advice and guidance of Mr. MacAlister, the Secretary of the Royal Institute, who was present with them that night, they had opened their doors rather wider, and admitted all those in the county and city who were engaged in the practice of architecture. They also hoped to have more honorary members who were interested in subjects allied to architecture. They did not want to set themselves up as a trade union in the narrow sense. They thought there was work that they could do that concerned the public. It was a good thing, too, for architects to exchange opinions on all sorts of matters. They could do a good deal in helping the younger members of the profession, and hoped also they might be of service to the city. People were taking more interest in the appearance of the public streets, and when a question came up such as a statue or a lay-out of a place he did not think it would be out of place to consult such an association as theirs and ask for criticism and suggestions. It was also desirable that architects and builders should meet together. One thing he was particularly keen about was that of fair play in accepting the lowest tenders. When they asked for tenders from men in whom they had confidence they should accept the lowest.

The Lord Mayor referred to the works designed by Sir Aston Webb.

Mr. J. H. F. Walter (President of the Norfolk and Norwich Archæological Society), referring to the relations between the Archæological Society and the architects, said it seemed to him that both of them sometimes adopted rather a *non possumus* attitude. They could not see eye to eye, but that was no reason why they should totally disagree, and his opinion was that the nearer they got together the better.

Sir Aston Webb said it was for the general good of the community that architects should join together. It led to good fellowship among themselves, and also it led—which was still more important—to a high standard of practice and conduct and work among members of the profession. Architects there who were entering the profession would, he hoped, take advantage of all the educational opportunities that were going to be given. He was not going to say much on the art side, because he thought it was extraordinarily difficult to educate a man on his art. That was a thing that was born in him. It ought to be an individual thing which he ought to produce himself, and he was very doubtful how far the influence of a master on that side was good. There was another side of architecture which he was quite sure should be taught, and taught properly, and that was the practical side. Delightful as the practice of architecture was, it was not only delightful, but a very serious and responsible occupation, like all other occupations which were spending other people's money. An architect had to spend other people's money, and it was imperative upon him, if he were a man of honour and a just man, to see that every penny of that money was laid out to the very best advantage. Permanence was another important characteristic that all buildings ought to have.

"The Hermit of the Atlantic": Decorative Panel by Einar Jonsson.

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## ILLUSTRATIONS.

### Office Building in Tientsin.

Tientsin is the port for Peking, the capital of China, and the plans show a four-story office building with living quarters above, to be constructed for Messrs. The Asiatic Petroleum Co., Ltd. The building will be a steel-framed structure with granite facing. It is finished throughout in first-class modern style; central heating and electric lift are provided. Special precautions are being taken against the extremely cold winds of winter and the dust-storms spreading from the Gobi Desert, double windows being provided where necessary. The building is fire-resisting, and is to be fitted throughout in a serviceable and up-to-date manner, due regard being had to the making for cleanliness and reduction in cost of upkeep.

The architects are Messrs. Palmer & Turner, of Hong Kong, Shanghai, and Hankow, whose London address is c.o. Mr. F. Oswald Reynolds, M.Inst.C.E., of 109, Victoria-street, S.W. 1.

### Kirkcaldy War Memorial.

The site of this memorial is the grounds of Balsusney House, which it is intended in the future to convert into an art gallery and museum. The ground rises gradually from the crossing where the main entrance is placed, and the memorial will be plainly visible from this point. It is designed to group with the house and thus give an area of interest to the park. The total cost of the memorial was not to exceed £3,900, and adequate display for one thousand names grouped under regimental headings was required to be provided. On this design these are on the retaining walls flanking the central feature, and are incised letters in stone. The area in front is levelled to form a sunk forecourt, and stairs ascend at each end of the flanking walls. The memorial is almost entirely freestone, with a bronze cross on the front and bronze emblematic panels on the sides and back.

The design illustrated, by Mr. John S. McKay, of Dennistown, Glasgow, was awarded the first premium in the recent competition.

### Composition of the Roman Order.

This interesting rendered composition was executed by Mr. S. Shaw (sixteen years of age), after six months' training under Mr. Gordon Hemm, architect, of Liverpool. Previous to this, Mr. Shaw had no architectural training, and the result, after such a short course of study, is very encouraging.

### Building Trades' Exhibition.

We give this week a plan of the Building Trades' Exhibition at Olympia, to be opened on Tuesday next. A list of the exhibitors is given on p. 528.

## EXHIBITION NOTES.

### DUTCH DRAWINGS AT THE A.A.

The drawings of Dutch housing schemes at the A.A. have an individuality of their own with a definite architectural value, though not perhaps of a kind to afford much stimulus to English architects. They often show a telling effect of solids and voids and a keen appreciation of solid masses of plain walling which, however, gives a rather fortress-like result. Where there is a more picturesque handling the effect is not so pleasing, for we find odd proportions of window panes and curious accentuations. Still, the drawings are well worth seeing.

### THE ALPINE GALLERY.

The Alpine Gallery has rarely been seen to such good effect as with the exhibition of Mr. Joseph Southall's pictures in tempera, water-colour, and pastel. The decorative effect of the pictures is largely helped by clever framing, as in Nos. 5, 7, 19 and 21. There are some sweet little subjects, such as No. 4, "Ludford Bridge"; No. 13, "The Ebb Tide"; and No. 12, "The Windmill." The latter combines with its frame in a very effective way. In No. 28 the striking value of the golden light of the picture with its gilded frame mark a particular charm; and in No. 38 we have an admirable rendering of a street scene. The low-toned pastel of Ann Hathaway's cottage (No. 46) claims notice; and amongst the figure work is a masterly portrait of John Harlock, J.P. (aged 100 years). The wonderful perfection and finish of the artist's work is notably seen in No. 7; but the strongest attraction for us lies in the charming pictures of landscape and buildings. Mr. Southall's exhibition is an example of the accomplished work which is attained after years of steady and whole-hearted work. It all suggests something of the methods of the primitives carried out with an individual refinement of force and colour.

### ROYAL WATER COLOUR SOCIETY.

In the course of many years' experience we cannot recall any exhibition which has given us so much pleasure as the current one of the Royal Water Colour Society, a notice of which we must defer until next week.

## MEETINGS.

FRIDAY, *April* 7.

*Town-Planning Institute.*—Mr. F. G. Baxendale on "Effect of Zoning in Land Values." At 92, Victoria-street, S.W. 1. 6 p.m.

*London Society.*—Dr. C. W. Saleeby on "More Light on London." At 18, John-street, Adelphi, W.C. 2. 4.30 p.m.

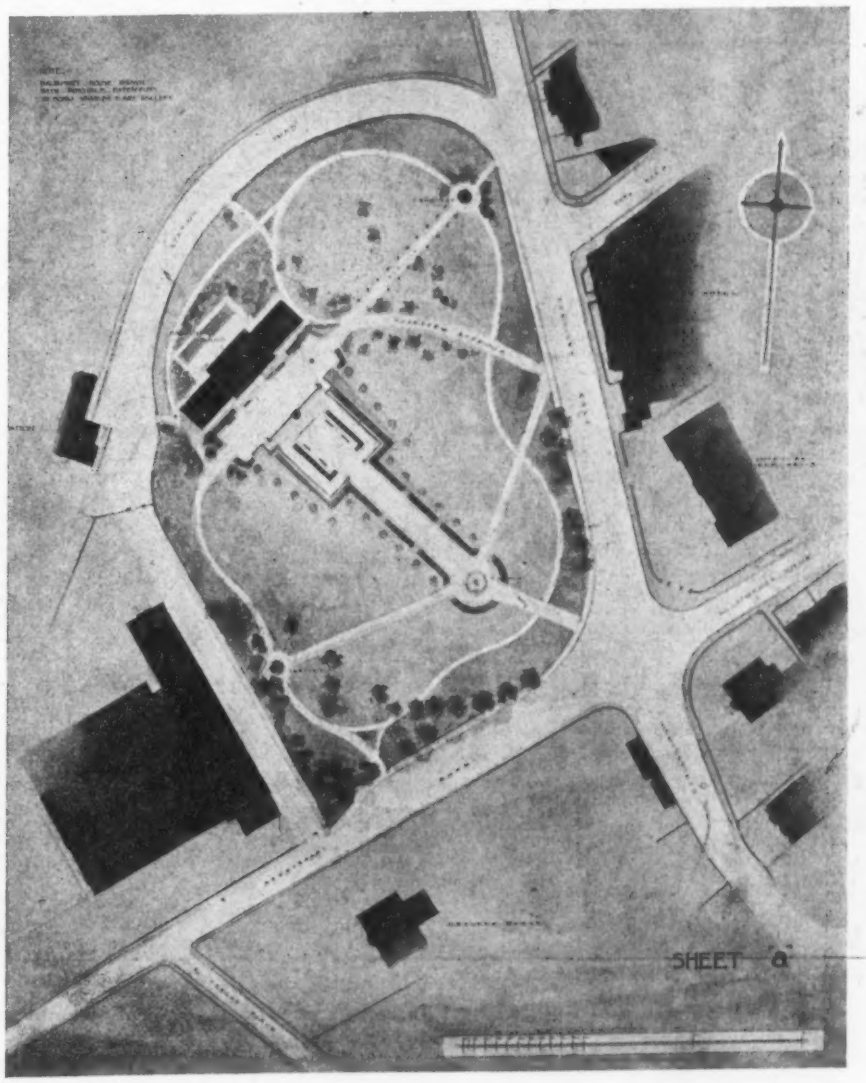
SATURDAY, *April* 8.

*Edinburgh Architectural Association.*—Visit to Messrs. Redpath, Brown & Co., Ltd., steel constructional engineers.

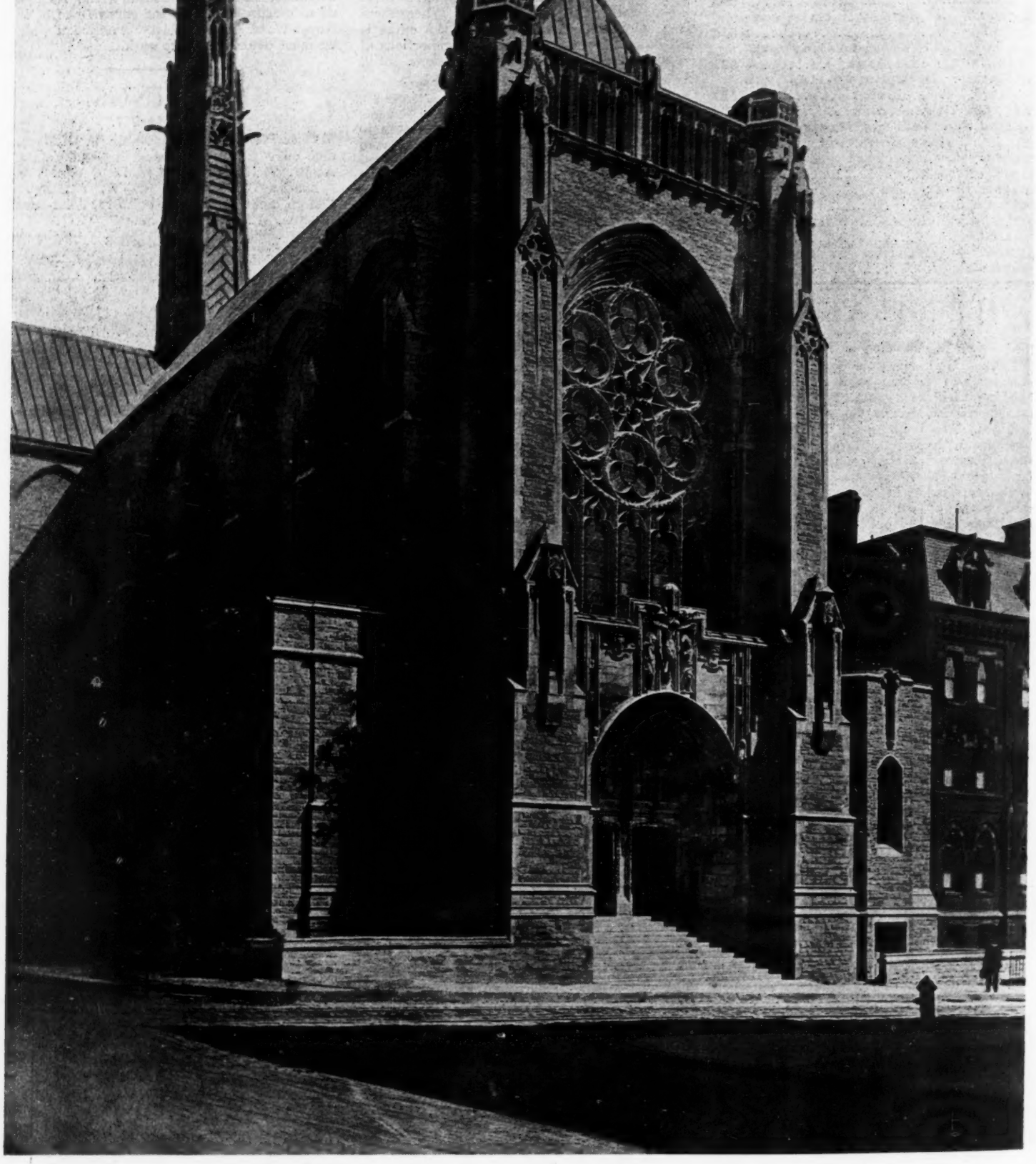
TUESDAY, *April* 11.

*Royal Sanitary Institute.* — Discussion on "Economy in Sanitary Appliances and Methods of Drainage," to be opened by Sir Henry Tanner. At 90, Buckingham Palace-road, S.W. 1. 5.30 p.m.

*Incorporated Institute of British Decorators.*—Annual General Meeting. At Painters' Hall, E.C. 4. 3 p.m.




**Kirkcaldy War Memorial Competition.**
First Premiated Design, by MR. JOHN S. MCKAY.



**St. Vincent Ferrer Church, Lexington Avenue and 66th Street, New York.**

Mr. Bertram G. Goodhue, Architect.

# EXHIBITION LAY-OUT AND STAND COMPETITION.

We give this week some of the premiated designs in the competition held by the Royal Academy Ateliers, for a lay-out for a Building Trades' Exhibition and for stands therein:—

The sum of £250 was placed at the disposal of the Royal Academy Ateliers Patrons' Committee in October last by Mr. H. Greville Montgomery, Director of the Building Trades' Exhibition, for the purpose of furthering architectural education, and of that sum £200 was to provide prizes for designs for a lay-out and stalls at Olympia.

A plan of the present Building Trades' Exhibition was supplied with the programme, and the schemes were to provide the same amount of superficial area for exhibitors' stalls as shown on that plan. Stalls were to be readily accessible and easy to find. Congestion of entrances and exits was to be avoided; the object of the lay-out being to make it easy for the exhibitor to display his goods and for the visitor to inspect them.

The prizes awarded in this competition were £50, £20, and £10.

The second part of the competition was for designs for a stall in the exhibition. The average area required by an exhibitor was to be taken as 20 ft. by 20 ft. Stalls were not to exceed 12 ft. in total height, woodwork was not to be less than 1 in. thick, and all materials were to be fireproofed.

The competition, which was open to the affiliated Ateliers, was held, and the jury of assessors (consisting of the Patrons of the Ateliers) made the following awards:—

Part I. Lay-out: First premium, £50, Mr. R. Murray, First Atelier; Second premium, £20, Mr. C. W. Box, Billerey's Atelier; Third premium, £10, Mr. S. Natusch, First Atelier. Mentions: Messrs. B. Frazer, W. J. Allcoen, and Mr. W. W. Wood.

Part II. Stalls: Six premiums of £20 each, Messrs. J. Godwin (two) and Mr. B. Fraser, First Atelier; and Messrs. J. H. Greenwood, R. J. Troup and A. V. Farrier, A.A. Atelier.

The competition drawings have been placed at Mr. Montgomery's disposal for display at the Building Exhibition at Olympia, opening on April 11.

# THE ARCHITECTS' WELCOME CLUB.

We have received a copy of the programme of the "Architects' Welcome Club." On Friday, April 21, at 3 p.m., there will be a reception in the Pillar Hall by the Presidents and Councils of the Institute, the Society of Architects, and the Architectural Association, to architects and friends. At 6.30 p.m. a banquet will take place in the Pillar Hall. Lectures have been arranged as follows:—

Wednesday, April 19, at 6.30 p.m., "Old St. Paul's and other Cathedrals," by Mr. Herbert A. Cox.

Thursday, April 20, at 6 p.m., "The Englishman's House: a talk to people who know nothing of Architecture," by Mr. Nathaniel Lloyd, O.B.E.

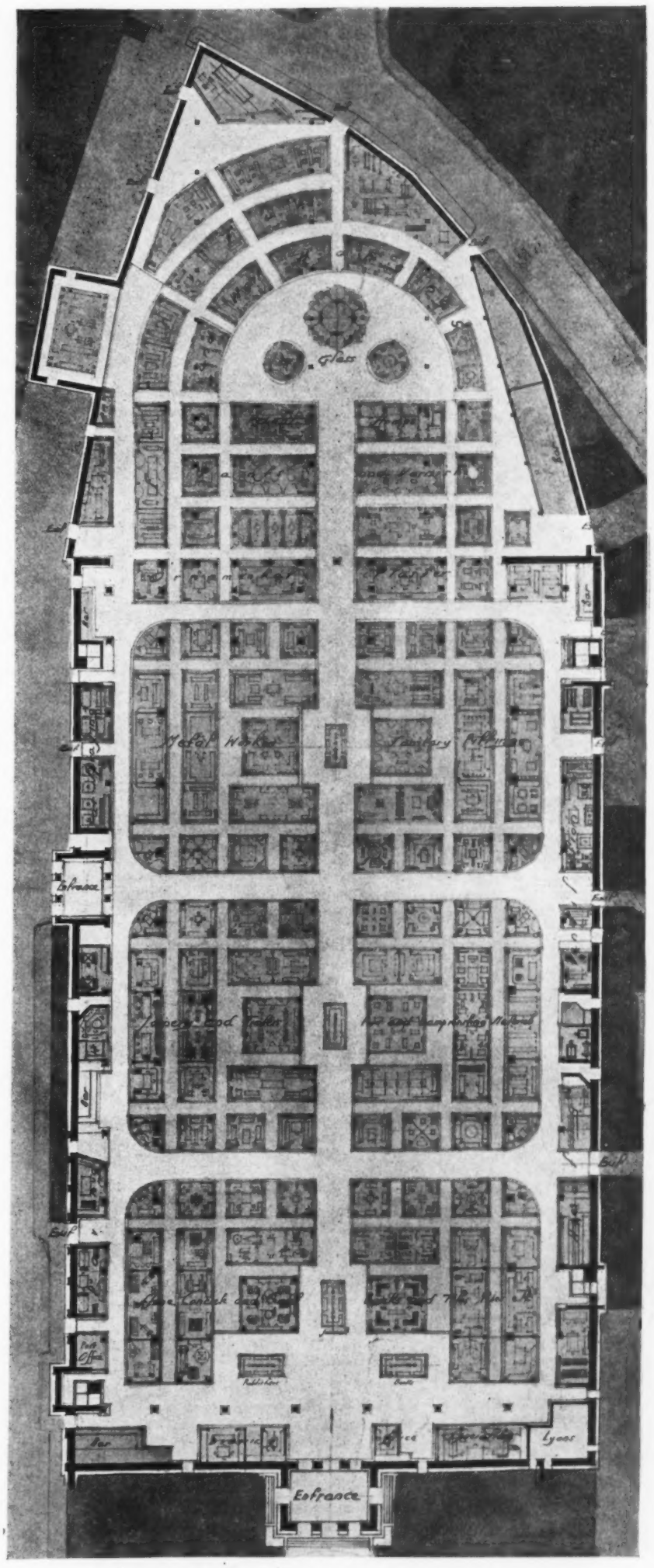
Monday, April 24, at 6 p.m., "What we mean by Town-Planning," by Professor Patrick Abercrombie, F.R.I.B.A.

Wednesday, April 26, at 6 p.m., "Modern Domestic Architecture: Fashion and Style," by Sir Lawrence Weaver, K.B.E.

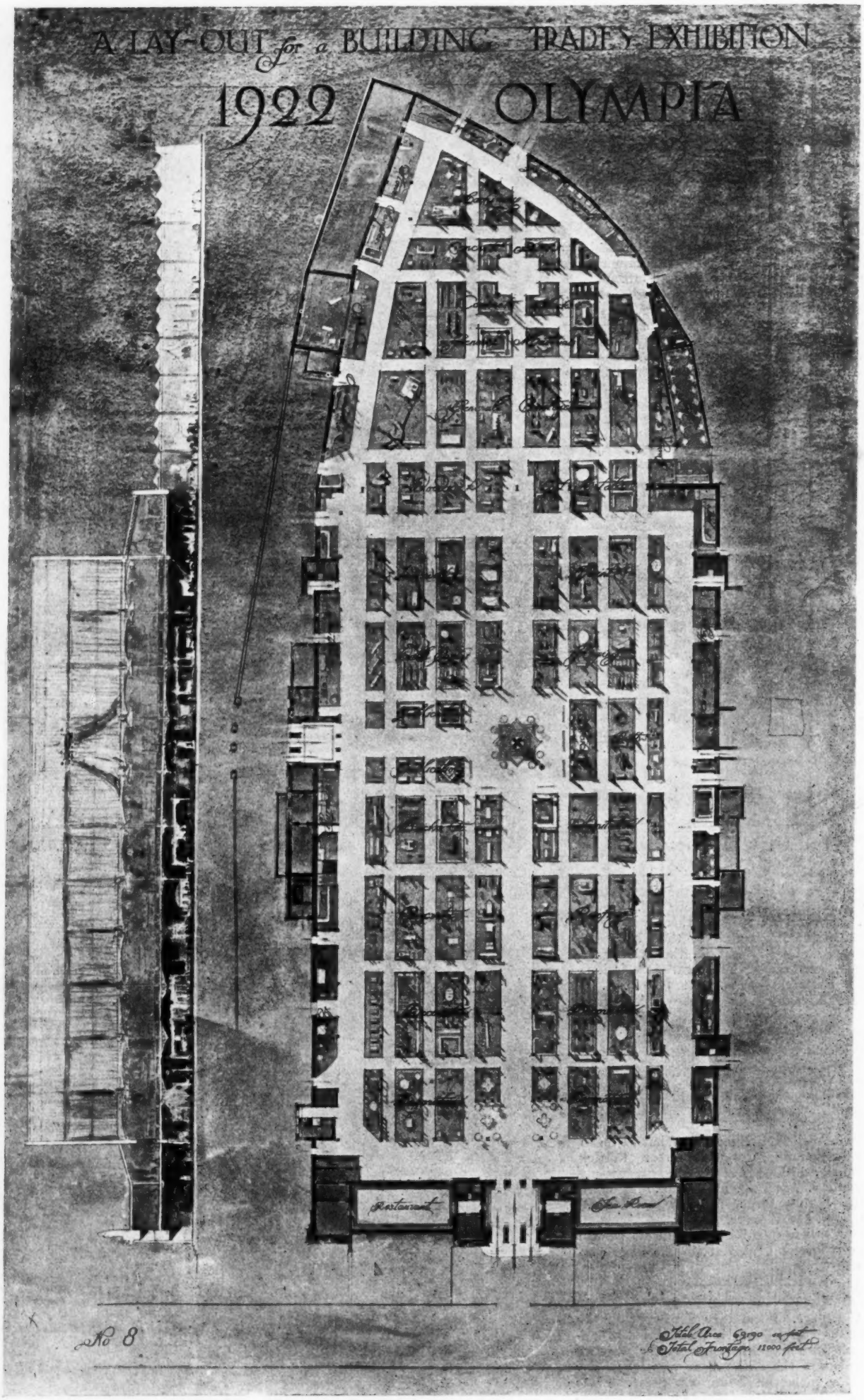
There will be an exhibition of cinematograph films every evening, at 7.45, in the large conference hall.

### A Manchester War Memorial.

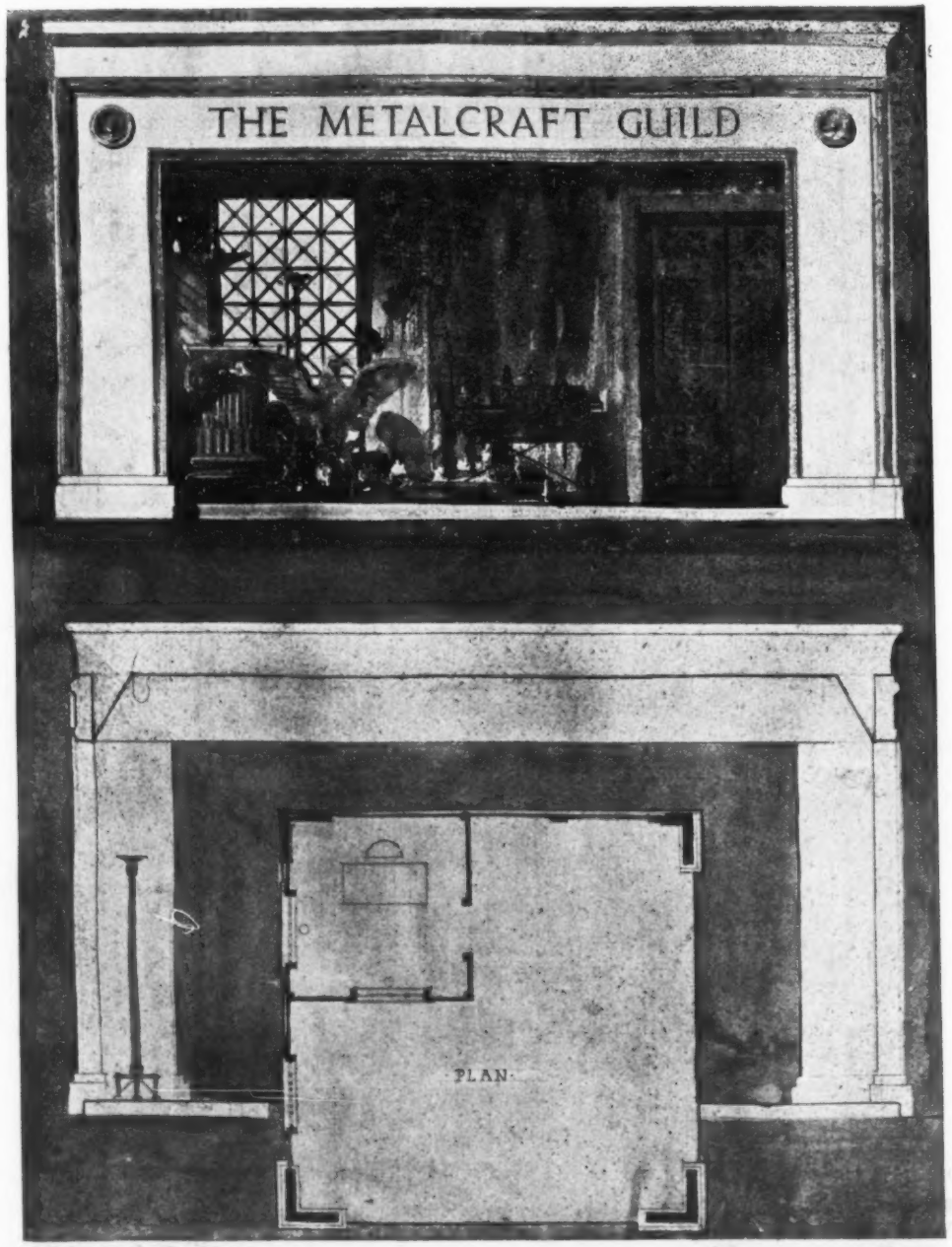
At the office of the City Treasurer in the Manchester Town Hall, a memorial was unveiled on Thursday last week to the memory of members of the department who fell in the war. The memorial is an oak panel, in the centre of which is a large silver model of Britannia. The names of the fallen are inscribed in silver letters, and over each name is placed a model in silver of the badge of the regiment to which each one belonged.



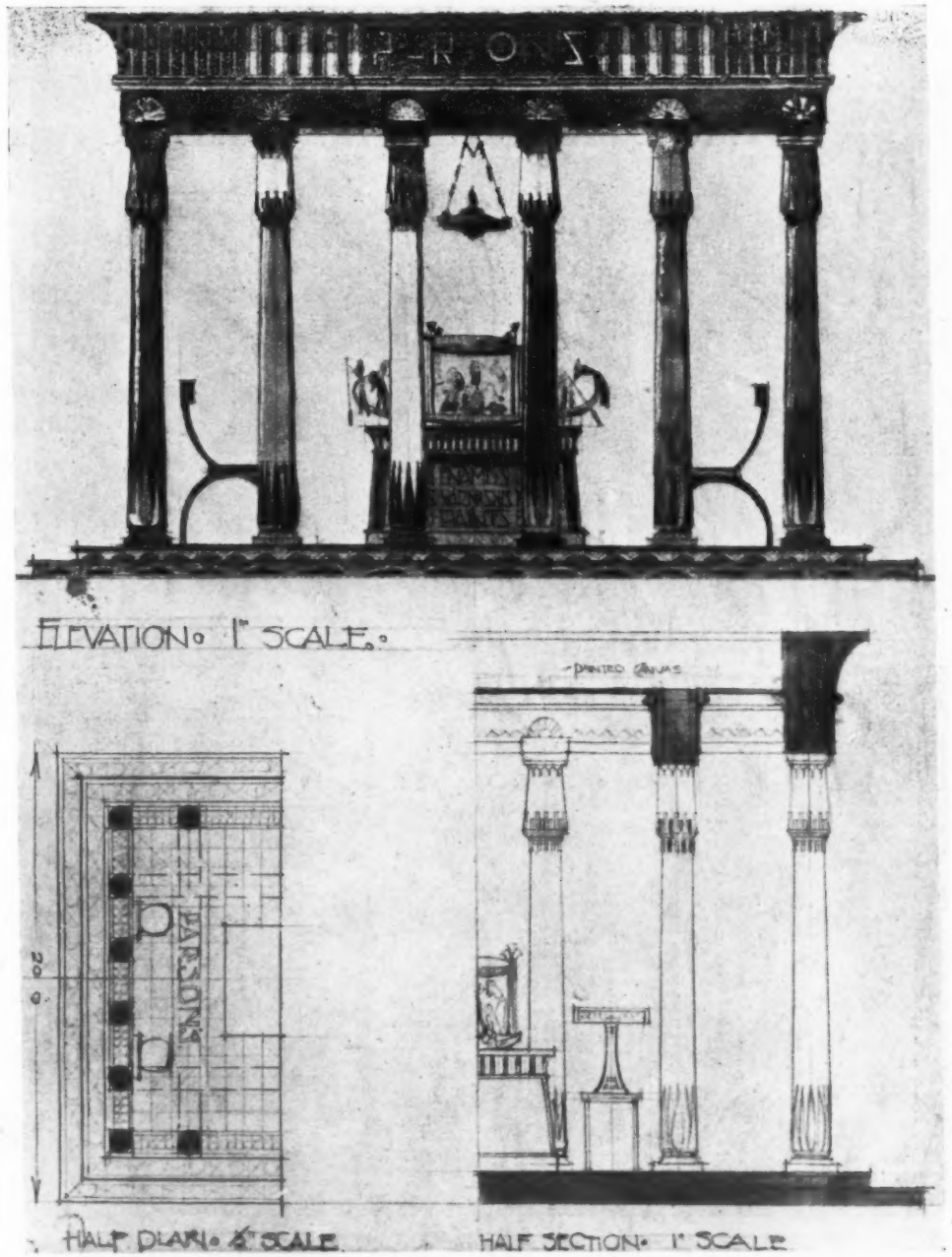

**Royal Academy Ateliers Building Exhibition Lay-out Competition.**
Second Premiated Design, by Mr. C. W. Box.




**Royal Academy Ateliers Building Exhibition Lay-out Competition.**
First Premiated Design, by Mr. R. Murray. (*See p.* 515.)

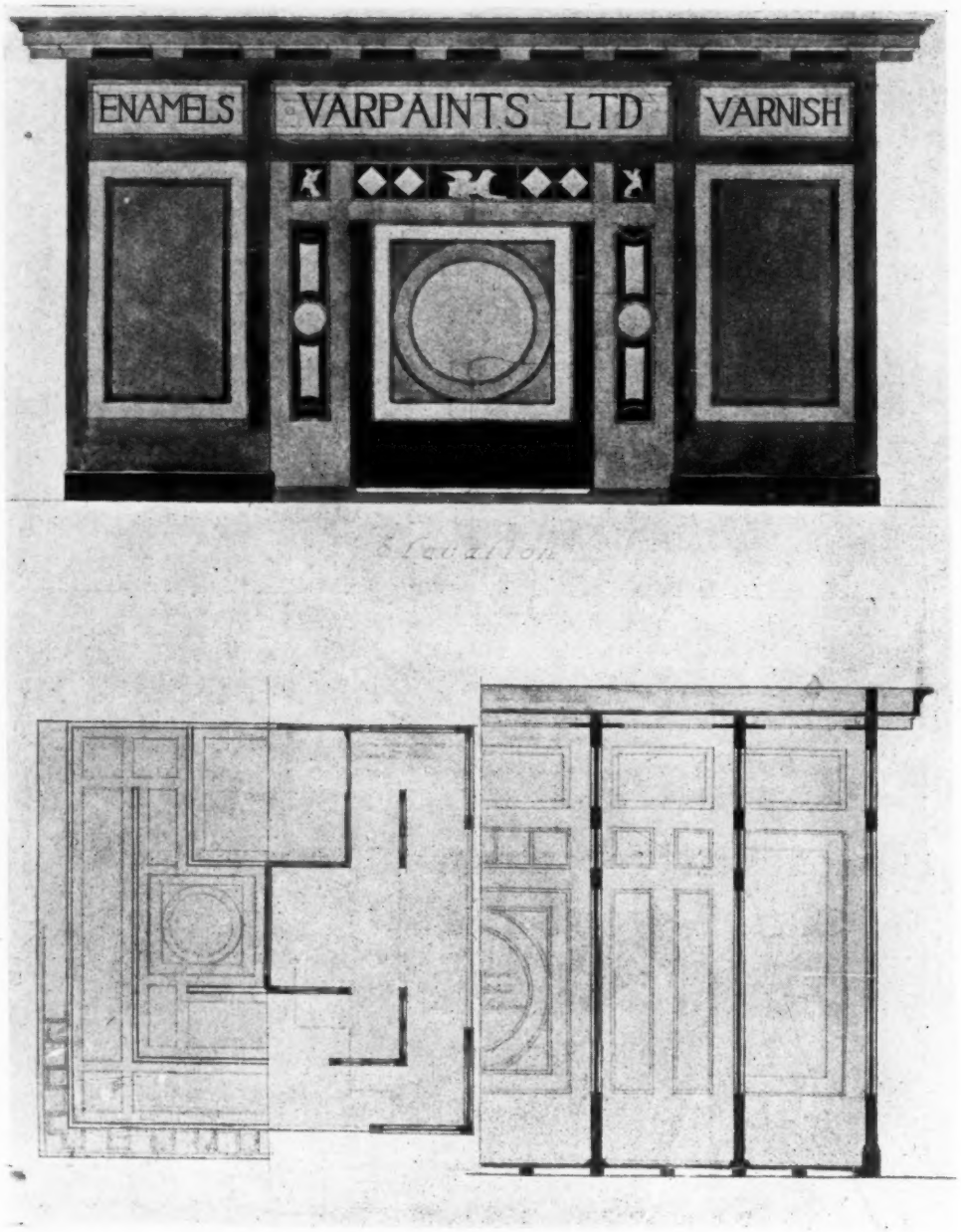



£20 Prize Design, by MR. R. J. TROUP.

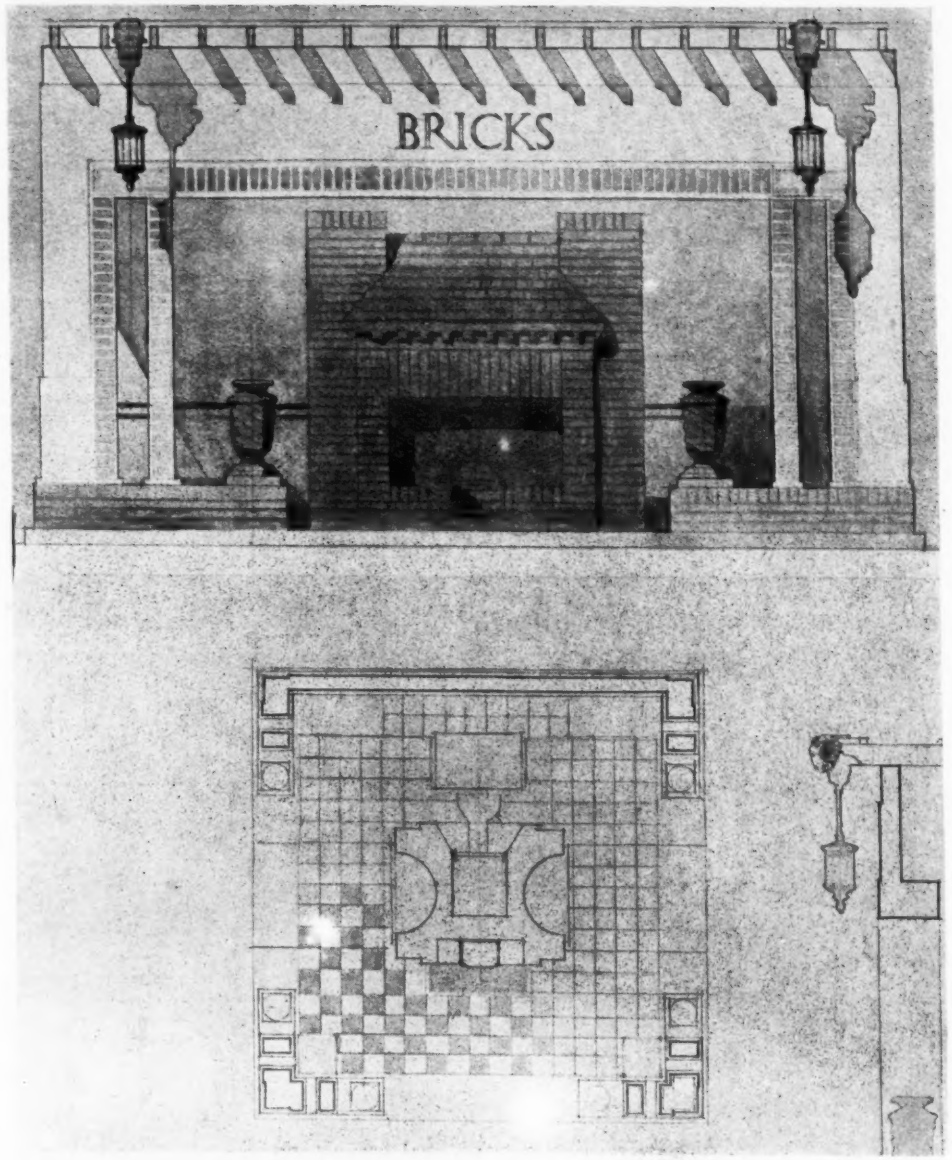



£20 Prize Design, by MR. B. FRAZER.

**Royal Academy Ateliers Building Exhibition Stand Competition.** (*See p.* 515.)

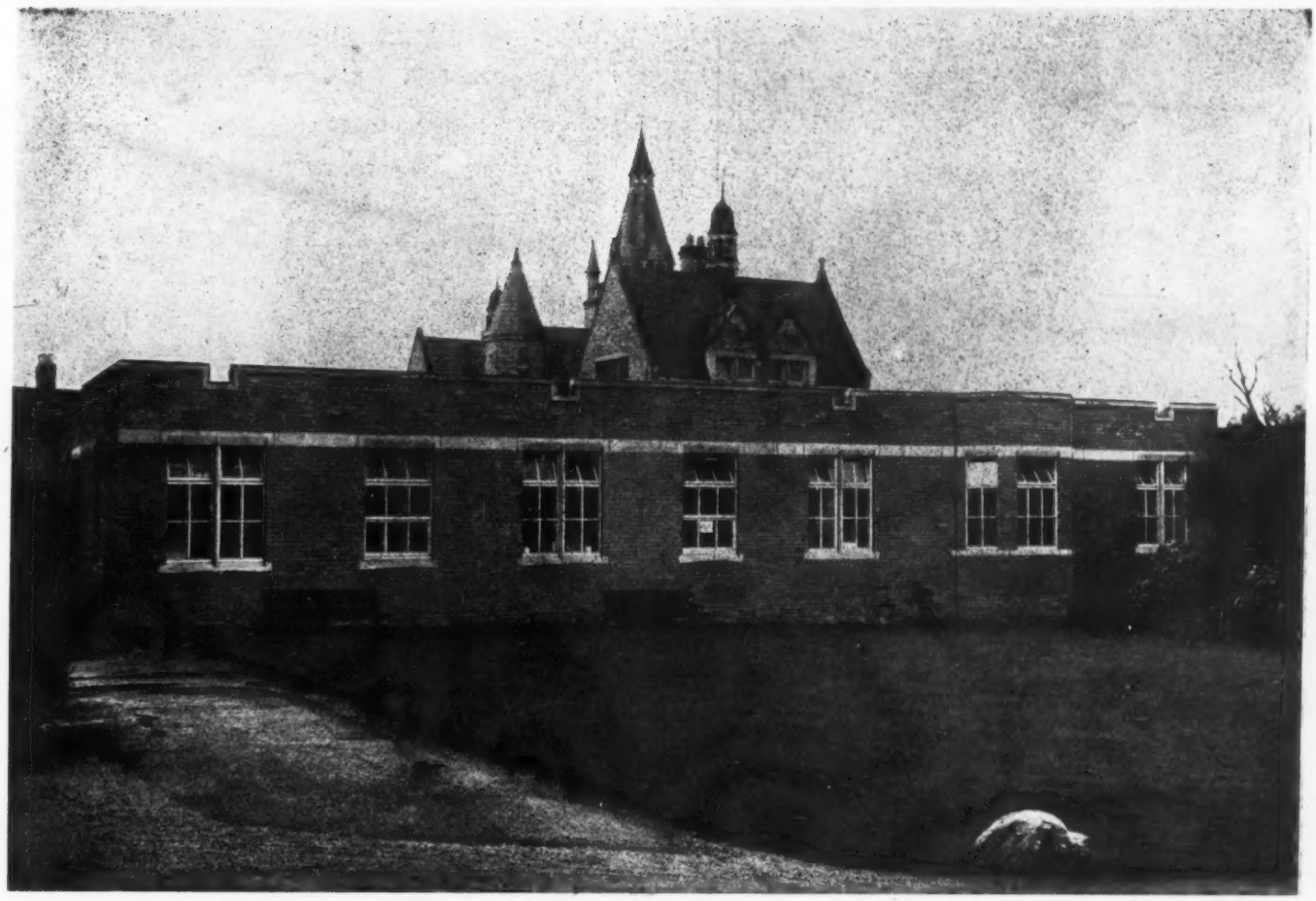



£20 Prize Design, by Mr. A V. Farrier.

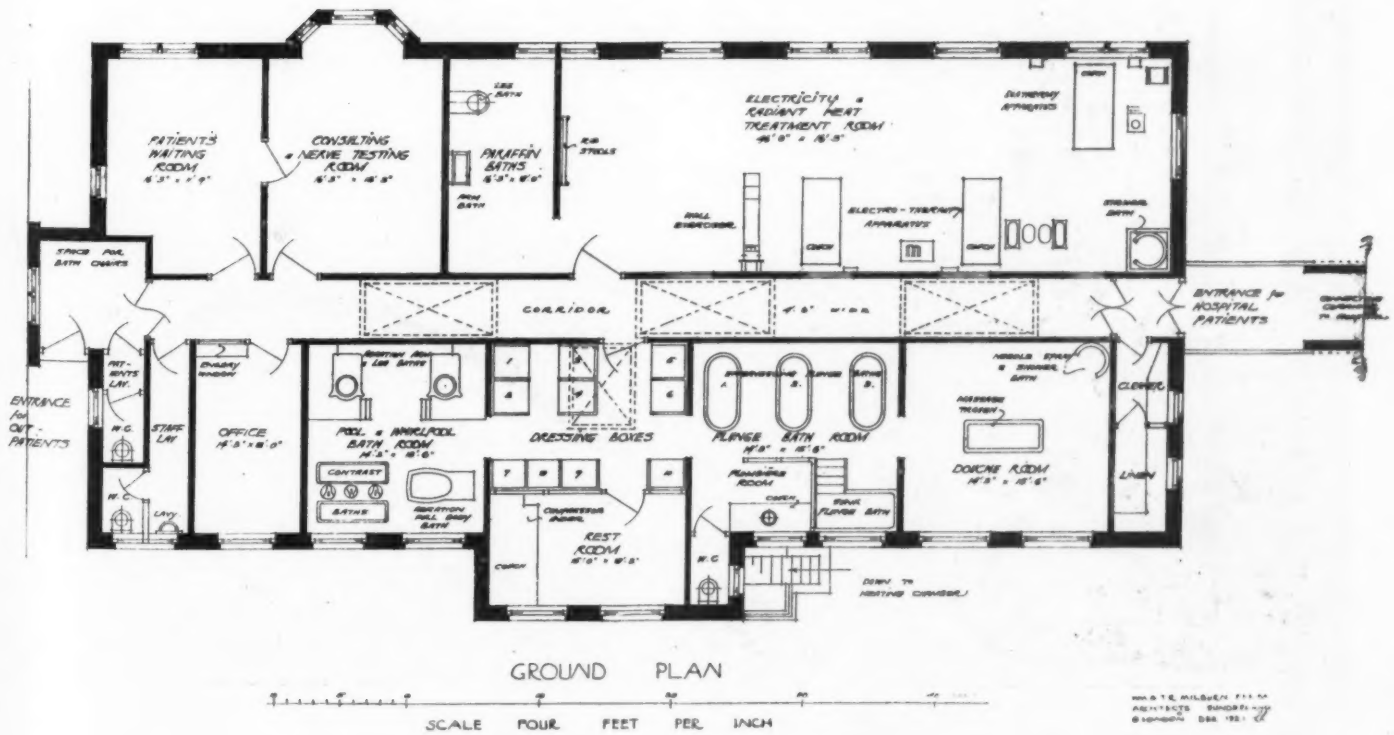



£20 Prize Design, by Mr. J. H. Greenwood.

**Royal Academy Ateliers Building Exhibition Stand Competition.** (*See p.* 515.)



EAST ELEVATION.

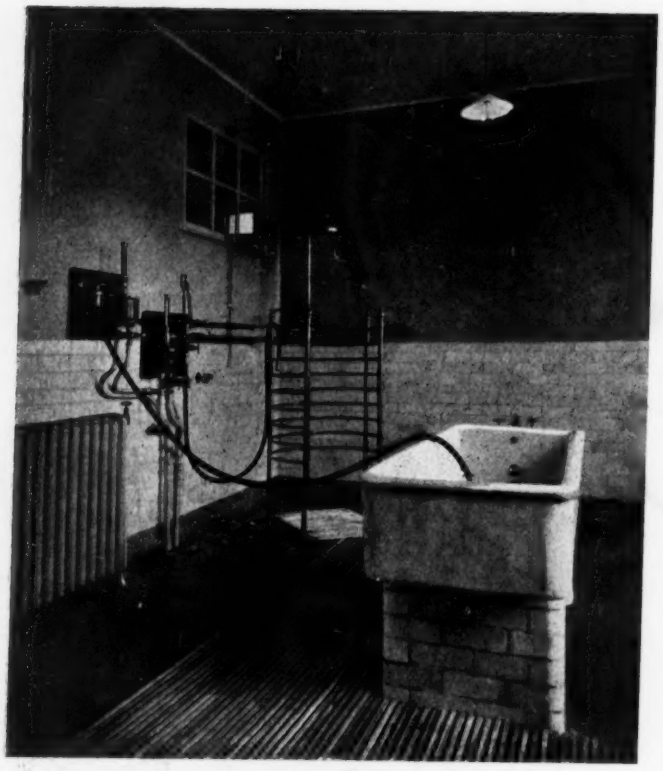



GROUND PLAN

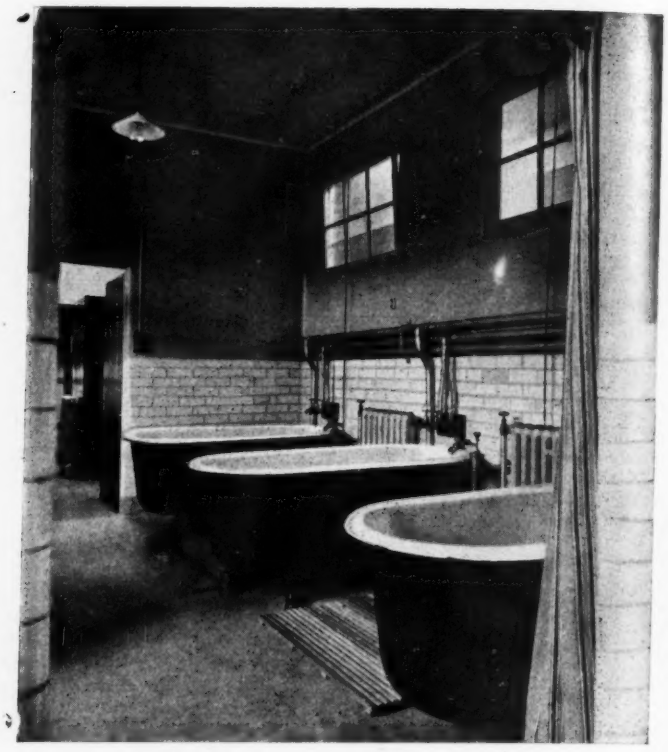
SCALE FOUR FEET PER INCH

**New Orthopædic Department, Sunderland Royal Infirmary.**

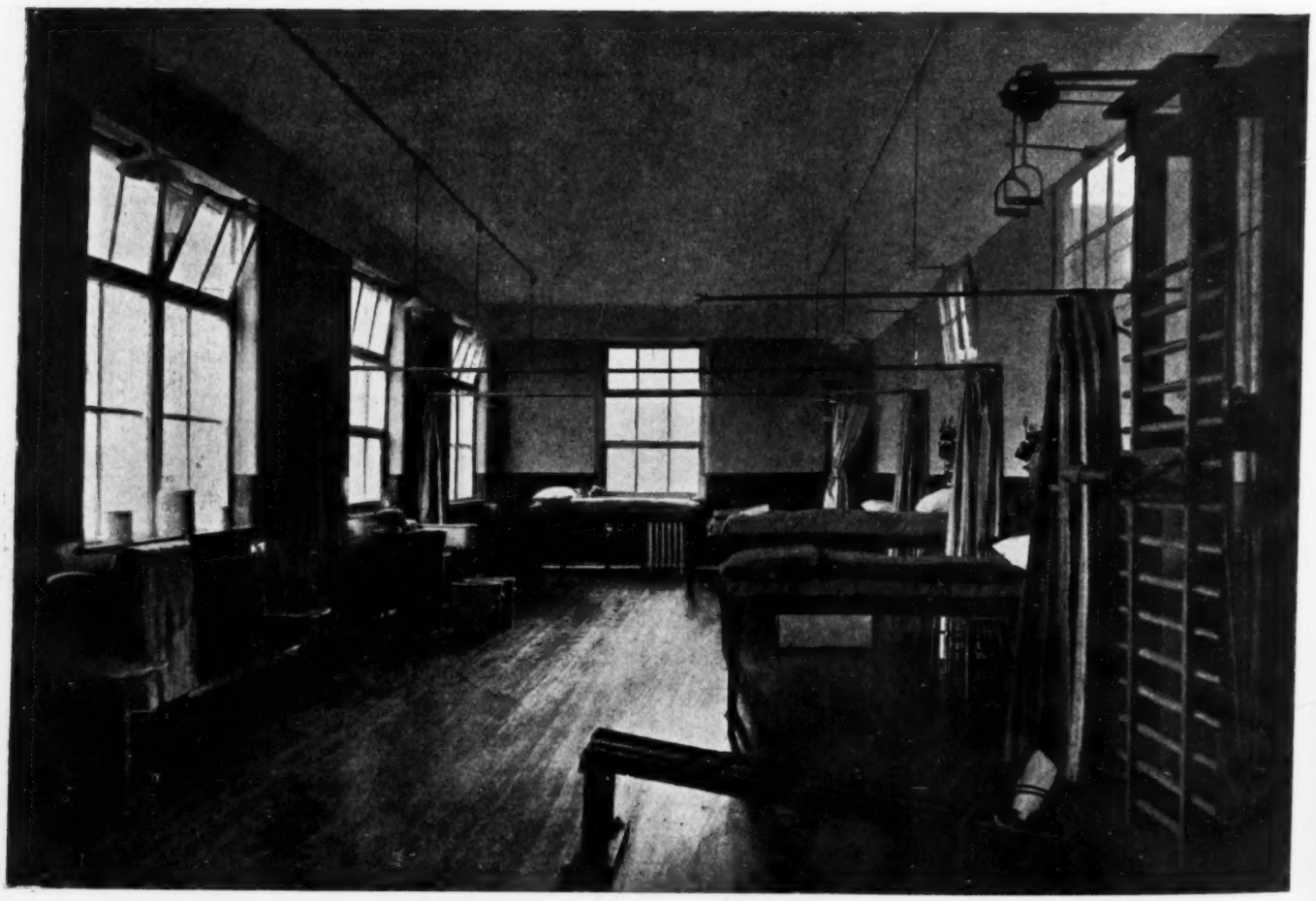
Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., Architects. (*See p.* 521.)



DOUCHE ROOM.



EFFERVESCING PLUNGE BATHS.



MASSAGE AND ELECTRICAL TREATMENT ROOM.

**New Orthopædic Department, Sunderland Royal Infirmary.**

Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., Architects. (*See p.* 521.)

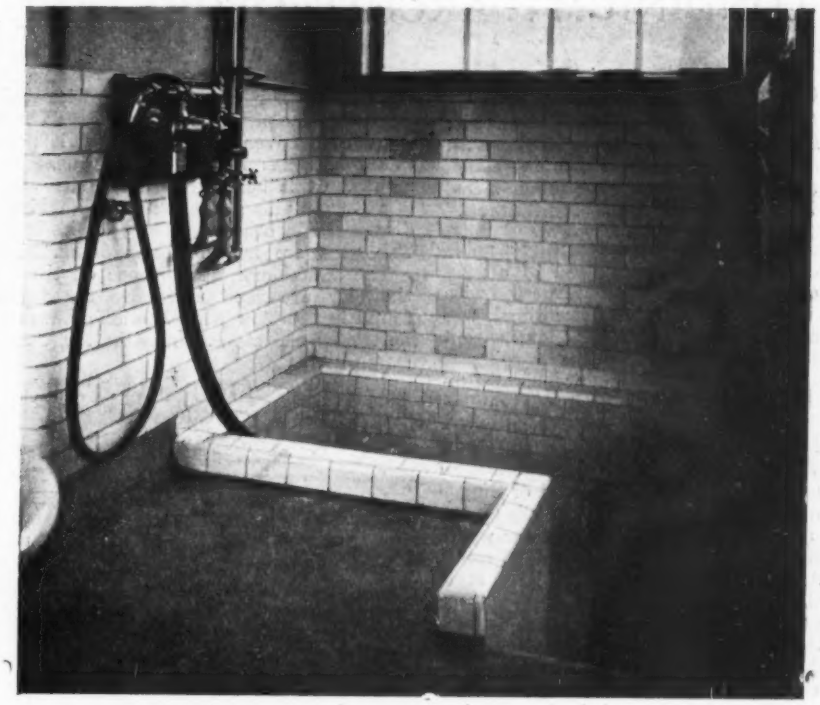
# NEW ORTHOPÆDIC DEPARTMENT, SUNDERLAND ROYAL INFIRMARY.

The first hospital for the relief of the maimed and deformed was the Royal Orthopædic Hospital, London, founded in 1838. Since then America has outstripped us in these special institutions, but the war which sent us hundreds of thousands of cripples brought a great advance in the national treatment of injuries to the limbs and brought home to us the imperative necessity for adopting the physical methods of cure by a trained staff, working in co-operation from the first day of the injury until the injured one returns to his work, if he is to be cured quickly and well. But the industries of peace-time have their victims no less than war, and they, unlike those of war-time, are constantly with us. It is for these that this new department has been created, and with it is combined a hydropathic establishment for medical as well as surgical patients.

The new building illustrated in this issue was completed towards the end of 1921. It is situated in the grounds of the Sunderland Royal Infirmary and is available for both in- and out-patients of the Infirmary and the Children's Hospital. The entrance to the north, in Durham-road, is for out-patients, and that in the south, reached by a closed corridor from the main corridor of the Infirmary, is for in-patients. The building is planned with a central corridor running the whole of its length. On the west side of the corridor is a small office, cloak-room and lavatories; a room with whirlpool and contrast baths; a rest room with dressing cubicles; a room with three plunge and effervescing baths, a sunk pool bath for neurasthenia and functional heart troubles, and an intestinal douche bath; a room with douche, spray and massage baths and a heated linen room. On the east side of the corridor is a waiting-room, the medical officer's consulting and examination room, with electrical tests; a small room with paraffin baths containing paraffin wax liquefied and heated by steam; and a very large room where massage, the various forms of electrical treatment, and remedial exercises and gymnastics with or without special mechanical apparatus will be carried out, and where also are the radiant light and heat beds and apparatus. The three sections of this long room are separable by movable screens. The department, as will be seen, is complete and capable of meeting all the needs of the population of 300,000, which the Sunderland Infirmary serves.

Owing to the prevailing high prices the construction of the building was carried out on the most economical lines possible. Outside walls are in 12 in. hollow brickwork, faced on the east front with second quality facing bricks and artificial stone dressings. The whole building is covered with a flat timber roof finished with "Vulcanite" and a layer of macadam one inch thick. Internally the floors are 1 in. grooved and tongued boarding nailed to fillets on concrete, and in the bathrooms and corridors concrete finished smooth, walls and ceilings are plastered with hollow internal angles, and a glazed brick dado 4 ft. high is provided in all bathrooms. Special attention has been paid to the hot-water supply, which is provided by means of two large storage calorifiers in the basement heated by steam from the existing hospital boilers. The rooms are heated by pipes and open radiators on the low-pressure system. The total cost of the scheme was approximately £9,000, which includes all fittings and furnishings.

The architects are Messrs. William & T. R. Milburn, FF.R.I.B.A., of Sunderland.



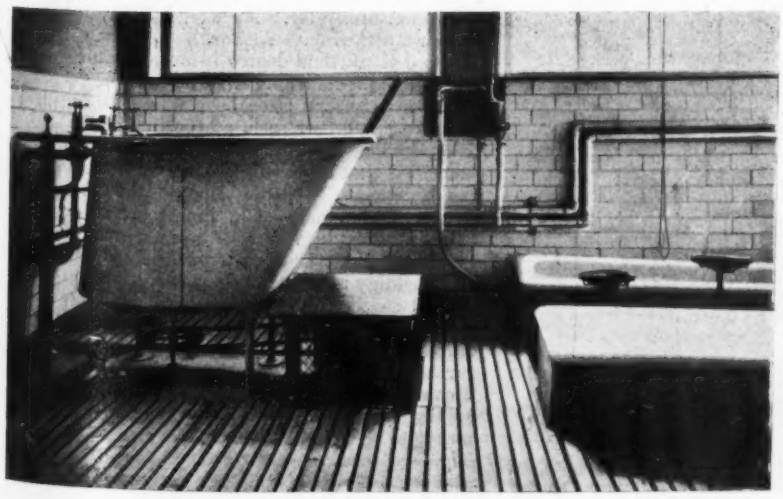
SUNK PLUNGE BATH.

**New Orthopædic Department, Sunderland Royal Infirmary.**

Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., Architects.

## DECAY AT EXETER CATHEDRAL.

A report made by Mr. E. H. Harbottle, Architect to the Dean and Chapter of Exeter, states that yearly there are fragments of mouldings and architectural features falling from various parts of the cathedral to the ground and on the roofs of the cathedral, all of which is an indication that decay is continually going on and becoming serious. The Norman towers, the west front, and the parapet of the northern wall of the nave, with other portions, require serious and immediate attention, and the stonework of many of the windows needs urgent repair. Perhaps, the most serious part of the report is that concerning the Norman transept towers, which are unique in England, and were erected by Bishop William Warelwast (1107-1137). The northern tower "shows serious signs of decay in its arcading as well as the cornices and plinths and two of its turrets." The southern tower, "now requires repairs to save from obliteration the beautiful Norman wall arcadings, weatherings and mouldings, and also the bell-chamber windows."



AERATION FULL-BODY BATH AND CONTRAST BATHS.

**New Orthopædic Department, Sunderland Royal Infirmary.**

Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., Architects

WHIRLPOOL AND AERATION ARM AND LEG BATHS.

**New Orthopædic Department, Sunderland Royal Infirmary.**

Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., Architects.

# LONDINIUM: ARCHITECTURE AND THE CRAFTS.—IV.

BY W. R. LETHABY.

## CEMETERIES AND TOMBS.

"*O more than mortal man that did this town begin,*
*Whose knowledge found the plot so fit to set it in.*
*Built on a rising bank within a vale to stand,*
*And for thy healthful soil chose gravel mixed with sand.*" Drayton's "Polyolbion."

Cemeteries.—The site of London by a noble tidal river, or rather at the head of a long estuary, on clean gravel ground intersected with streams, was well chosen. The ground was open heath with scrubby vegetation, except for woods here and there where the soil was suitable. Sir Thomas More planned his "Utopia" on a site similar to that of London. The buildings of London have spoilt an excellent golf course! The walled city set down in the fair land must have been beautiful indeed, as seen from the Hampstead or Surrey hills. On approaching the turreted walls by the straight and narrow roads, the traveller would have had to pass through a wide belt of cemeteries. Around Londinium in its later state the gardens of the dead would have come right up to the city ditch, just as at Constantinople, the beautiful Turkish cemeteries, with their noble cypresses, lie close beside the walls of the city.

"Around Rome was a great belt of cemeteries; the sides of the main roads issuing from the gates were especially favoured sites; the chief region of all was that crossed by the Via Appia and Via Latina" (Lanciani).

"An immense field of the dead had extended all along the north-eastern quarter of ancient London, from Wapping Marsh to the fen beyond Moorfields" (C. Knight).

Goodman's-fields, Moorfields, Spitalfields, were all cemeteries, and it is curious that they all have in common the name of fields. In the valley of the Fleet river by Ludgate and Blackfriars on the west were also cemeteries; and others lay beyond Southwark (Battersea-fields and (?) St. George's fields). The city of the dead must have been impressive on account of its extent and the number of its population, and doubtless it was beautiful. The harsh horror of modern cemeteries is a new thing on the earth. In antiquity, cemeteries were beauty, poetry, history. The monuments of Londinium would have been of many kinds, small and big—columns, sculptures, mausolea, altar-tombs, tomb-houses, and steles or slabs.

These tombs were not cold and pale, but profusely carved, and, doubtless, in most cases, coloured. The monuments in the museum at Treves show many traces of colour—red, green and yellow, if I remember aright. Dr. Ashby recently described a huge Roman necropolis at Syracuse in words which might apply to Londinium. "Fragments of memorials were found varying from simple steles and columns to the chapel with rich architectural forms, the decorative portions being in soft limestone with considerable traces of polychromy." Painting over coarse soft stone was a general tradition and bright colour liberally applied would greatly change the aspect of rather crude carvings. At Bath an inscription mentions the repair and repainting of a building. This might be internal painting, but it was an external inscription and probably included outside work. The Corinthian temple at Bath was decorated with colour on the exterior. Mr. Irvine says of a piece of the cornice: "Considerable portions of the red paint with which it had been covered remained among the carving."

Finds of burials are still not infrequent in London; as specimen cases I quote two newspaper clippings: "A workman excavating in Cannon-street-road, Stepney, has unearthed an urn containing bones at a depth of 2 ft. below the road level; Sir C. H. Read observed that it provided a link in the track of the Roman road eastward as the custom was to deposit these urns at the sides of the roads" (December 19, 1919). "The discovery of two Roman urns in Mansell-street, Goodman's-fields, is of considerable importance. The urns were found about 10 ft. below the garden of a house. Both contained inner cinerary urns with calcined remains. The perfect one resembles an ordinary jar with a cover; the outer urn is perfectly round and has handles on each side by the mouth. It is believed that the site was that of a Roman villa; bricks and tiles having been discovered in other parts of the site" (1913). The urns are now in the London Museum.

The actual monuments once on the east of the city are represented by the fragments found in the Tower-hill bastion; those to the north, by the stones found in the Camomile-

Fig. 1.

street and other bastions; those on the west, by the soldiers' monument found at Ludgate-hill by Wren, by later discoveries on Ludgate-hill, in 1806, and the fragment of the monument of Celsus found on the Blackfriars site.

*Steles.*—A memorial slab in the Guildhall Museum is particularly interesting, as it is obviously in the tradition of Hellenistic art. It is a true stele of the usual small scale, about 2 ft. wide and 2½ ft. high; it bears a relief sculpture of a soldier in a panel bordered by pilasters and finished with a pedimental top having little acroteria (Fig. 1). This broken slab is in the reserve collection and is not usually visible, nor is it in the catalogue; the supposition is that it was found in one of the bastions with so many other remnants of tombs. It must, I think, be one of the earliest Roman monuments discovered in London.

At the Guildhall is shown a sculptured slab thus described: "Monumental tablet, marble,

Fig. 2.

bearing in relief the figure of a man armed with a trident and sword (?), and having a shield-like protection to the upper portion of his left arm; above is a fragmentary inscription; Greek; 21¾×15½×3½ ins. Tottenham Court-road." It was illustrated in an early volume of *Archæologia* (xi, p. 48). On the original drawing at the Society of Antiquaries is written: "This white marble slab was found by Mr. Miller among the ruins of a house at Islington. It is now fixed up on the front of a warehouse in High-timber-street, near Labour-in-Vain Hill." (This was south of Thames-street in the City.) The inscription is given by Hübner; with the writer in V.C.H., we may doubt whether this slab is not an importation like the Arundel marbles, but other works in white marble will be described in this section, and gladiators were well known in Londinium (Fig. 2).

In the British Museum is a small stele with a well-carved relief of a man heavily draped in a dignified pose and classical taste, and also having a Greek inscription. This stone slab is little more than a foot wide by about 2½ ft. high (Fig. 3). It was obtained in 1911, but it was drawn by Archer about 80 years ago. It was found in White's Conduit-fields, that is,

Fig. 3.

near Lamb's Conduit-street. This, too, has a Greek inscription of which I can only make out the last word and a few other letters:—

. . . . . OC
. . . . . OT
. . E XAIPE

The last word is Farewell. I have felt some doubt as to this really pretty little work being a London antiquity. My sketch is given from Archer's drawing. Although he may have restored it to some degree it is probable that it has suffered from decay since he drew it. Other Greek inscriptions have been found in Britain.

There is another stele at the Guildhall which is so similar in several respects to the one just described that it can only have been carved in the same shop. It is described in the catalogue as a "Monumental slab, limestone, on which is represented a figure of a man and child: the former is clothed in a toga, the folds of which he is holding in his left hand; 26×13½×2¼ ins." That two slabs so much alike should be discovered in one city is a strong argument in favour of their having originated there. Notice, further, how the little pediment over the British Museum slab resembles that of the slab of the soldier first described. Again, the wide, plain margins are like those of the gladiator slab. The evidence seems to be in favour of our accepting all the four slabs described as truly London works.

In the British Museum (the Roman corridor) is a tall inscribed slab of the headstone type, about 6½ ft. high (Fig. 4). We may see clearly that it is a descendant of the steles by noting a few little points. It has the side pilasters

and a pediment on which some lumps carry on the tradition of acroteria. An inscription occupies the field where the stelæ have sculptured reliefs, and a lower space is occupied by a festoon. From the inscription, NA ATIENI, it seems that it commemorated a man born in Athens. This slab is especially like a large stele at Cirencester, which had two panels, the upper one having a relief and the lower an inscription. Proportions, pilasters, pediment are all like our London slab. Haverfield assigned the Cirencester slab to the end of the first century, and the London one can only be a little later. The inscription terminates with the early formula: H[IC] S[ITUS] EST.

Fig. 4.

This slab is much weathered and it stands at the Museum in a bad light, where it is difficult to make out the details. Running stems, with flowers on the pilasters, are quite pretty (Fig 5), and, indeed, the whole thing has dignity. The lettering was free and doubtless more elegant than the painted forms now suggest.

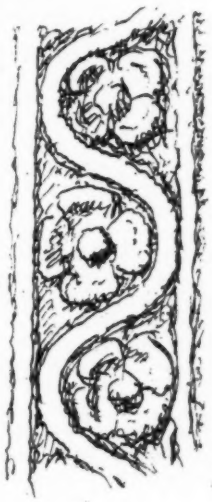


Fig. 5.

Several larger memorial slabs have been found in London which had big reliefs of soldiers. One at the Guildhall and another at Oxford will be described under sculpture. There are two fragments in the British Museum which may stand for the type and be discussed here. One is a head a little less than life-size, part of a standing figure in a round-topped recess. Above is an inscription naming Celsus a *speculator*; it was found at Blackfriars in 1876 (*The Builder*). This much-injured fragment appears very rude, but the others of this class were competent work and sculpture. The second is only a head now in the upper gallery at the Museum; both were probably works of the first half of the second century. Four known examples of this type must represent many—perhaps dozens.

At the Guildhall is a fragment of sepulchral sculpture, which may have been part of a larger monument rather than of a stele, but I will speak of it here. Just enough remains to allow of the restoration of the scheme. A winged Cupid at the end of a panel which doubtless bore an inscription, would have been one of a pair. The Cupid holds an ivy-leaf, symbol of the grave, and above is a festoon with a bird perched on it (Fig. 6). Two or three grave slabs at Chester with reliefs of sepulchral banquets have similar festoons and birds which must have had symbolic reference to an after-life.

A much-battered fragment of relief sculpture at the Guildhall may, I think, be a remnant of a sepulchral banquet; it shows the upper part of a man in a recess with the point of what looks like the arm of the usual sofa-like bench behind him.

*Chests and Coffins.*—In earlier Roman Britain bodies were cremated and the ashes disposed in urns, lead boxes, and in other ways. There is in the British Museum a truly magnificent urn

Fig. 6.

of hard porphyry-like stone which was found in Warwick-square. At the Guildhall is a small sarcophagus-like chest about 2 by 2½ (Fig. 7). Its discovery was recorded by Price thus: "A coped stone of a marble tomb has been discovered near to the west door of St. Helen's Church, Bishopsgate; associated with it was a coin of Constantine Junior, A.D. 317-340" (Lond. & Mx. Archæol. Soc. Trans., vol. v, 413). The material has shining particles and seems to be white marble. In this respect it should be compared with the gladiator relief already

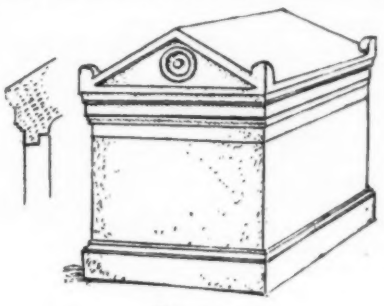


Fig. 7.

described, and the fine Clapton sarcophagus mentioned below. The association with the coin must have been accidental, for this chest cannot, I think, be later than the second century. This cist would have contained an urn holding burnt bones; compare a rude stone cist from Harpenden in the British Museum.

An excellent account of London graves is given in V.C.H. Stow described the finds in Spitalfields in his day thus: "Divers coffins of stone and the bones of men without coffins, and great nails of iron, were found a quarter of a yard long. I beheld the bones of a man lying, his head north, and round about some such nails, wherefore I considered them to be the nails of his coffin." Many plain coffins of stone have been found in the city and suburbs. In an old MSS. collection which I have is the note: "About Dec., 1717, was taken up out of ye ground near ye new church of Rotherhithe, a stone coffin of prodigious size in which was ye skeleton of a man 10 foot long" (!) A minute of the Society of Antiquaries (July 28, 1725) reads: "An ancient glass vase of bell-shape found in a stone coffin 14 feet under the ground by the portico of St. Martin's Church [in the Fields]; 'tis now in Sir Hans Sloan's collection." The "vase" was doubtless one of the little ⊥-shaped bottles. Price described a stone coffin found in Fleet-lane nearly eight feet long containing a skeleton in lime.

The wooden coffins must have been still more common. Conyers about 1670 recorded the finding of one in an excavation at Fleet ditch. "About ye middle of the new ditch as low as ye bottom of ye old wall there were found an oak coffin turned black, of boards with bands, a man's length from ye old ditch wall, upon the old wharfing, or as I suppose natural ground wharfed upon. In this coffin was a glass vial in ye fashion [⊥, an expanded base with long neck], and brass like a hinge, there lay amongst the bones, the glass I have by me" (Conyer's MS.). This was evidently one of the chests described by Mr. Ward: "wooden coffins or chests were in common use as the presence of iron nails, iron or bronze bindings, hinges, and other mountings prove." An oak coffin was found in Moorfields in 1873, the objects from which are now in the British Museum.

Two stone coffins are preserved in the Guildhall collection. Two containing lead coffins were found at Pie Corner, St. Bartholomew's, in 1877 (Lond. and Middx. Trans., vol. v). Lead coffins were usually ornamented and will be further considered. It is probable that some of the coffins of wood and of stone were Christian burials.

The coffins of stone described were roughly wrought and they were buried in the ground. Others, however, have been found which are handsome pieces of workmanship and bear inscriptions.

Three handsomely decorated stone sarcophagi found in London are at the Guildhall, the British Museum, and Westminster Abbey. The sarcophagus at the Abbey is the earliest in style. It was found under the green at the angle between the north transept and the nave in 1869 and now rests by the entry to the Chapter House. On the cover is a large cross which seems to have been cut on the old stone in the twelfth century. The evidence seems to have been against its re-use in Christian times. It was the opinion, however, of the discoverers that it had been moved from its original site, but it was found close to the presumed Roman road to the river bank. The front has a panel with an inscription in excellent lettering giving the name of Valerius, a superventor in the army, and beginning MEMORIAE. This form is found in two or three other British inscriptions and was frequently used on tombs at Lyons. The Westminster inscription and the panel in which it is placed are of comparatively early style and it is difficult to think that such work can be later than about 200 A.D. On the other hand, it is said that the new mode of burial at full length in a sarcophagus was not adopted in Britain until about 250 A.D. I do not suppose that our example is so late as this. The front may be compared with a slab in Edinburgh Museum c. 160 A.D. (J.R.S., II, p. 128). The Lyons inscriptions of a similar type are also of the age of the Antonines. Altogether I cannot think that the Westminster tomb is later than 200 A.D. It is possible that it may first have contained cinerated remains and have been a cist rather than a sarcophagus.

The sarcophagus at the British Museum was found in Haydon-square, Minories, the site of a part of a cemetery where in 1797 "many curious fragments of Roman pottery as well as glass vessels were discovered and two complete urns with bone ashes, &c., were taken up." This stone sarcophagus contained a lead coffin, now also in the British Museum. At the Society

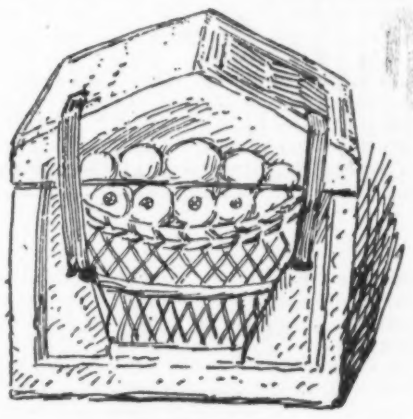


Fig. 8.

of Antiquaries is an accurate drawing of both made at the time of the discovery. The cover was securely clamped down with iron (Fig. 8). At the centre of the front is a simple medallion

portrait head, the rest is filled with flutes (Fig. 9). The outer face of the cover, which slants up to a ridge, is carved with acanthus leaves (Fig. 10), the inner slanting side is plain,

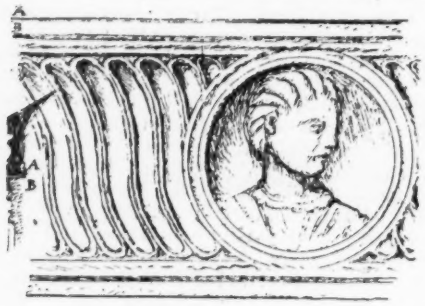


FIG. 9.

and this shows that it stood in a building or against a wall. At the two ends are carved baskets of fruits, and these must be symbolical (Fig. 8). This tomb had no inscription; it belonged to a time when inscriptions were few. Whether itself the tomb of a Christian or not, it is of a Christian type, and I should date it about 340 A.D.

The sarcophagus now at the Guildhall was found at Clapton in 1867; it resembles that last described and must be very nearly of the same date. It lay east and west, "the Christian orientation," as Mr. Reg. Smith notes. The cover was attached to the lower part by strong

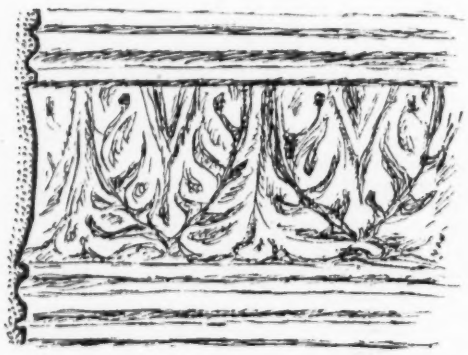


FIG. 10.

iron straps (*cf.* Fig. 8). It is described as white marble or oolitic limestone, and there are many sparkling particles in the material. The front, which is 80 in. long, has a portrait bust at the centre in a circle, above a panel in which is the inscription, and the rest is filled with vertical flutings (Fig. 11).

The cover is lost, the back and ends are plain, and it probably stood in a building. The portrait relief is curiously early Christian in character. The fluting is exceptionally refined

FIG. 11.

and effective. This is a truly beautiful work and doubtless if it were in an Italian museum it would be much better known to Englishmen than it is.

A full and excellent account of it is given by Price (Lond. and Mx. Archæol. Soc. Proceed., vol. iii), in which he compared it with some tombs in the Lateran Museum, showing that it is in the style of early Christian monuments *c.* 340–50. (The same paper contains descriptions of several plain stone coffins.)

The inscription on the Clapton tomb was very short, hardly more than names, and it does not seem to have contained any expression of faith. The Haydon-square tomb had no inscription. This reticence is characteristic. "The historical inscriptions of this age can be counted on the fingers of one hand. . . . It is curious to find a noteworthy lack of ordinary sepulchral inscriptions of private persons in the fourth century; there are very few Christian tombs, but it is much more surprising to find a lack of those of the ordinary heathen type. Conceivably fourth century tombs were handiest for the Saxon invader." (Sir C. Oman, "Eng. before N. Conq.") Christian inscriptions are very few in France also; there are not, I believe, half a dozen of the fourth century.

This tomb and the other are good examples of the skilful way in which forms were obtained in a block of stone without cutting to waste; observe how the mouldings in Fig. 10 lie just on the surfaces. This is a lesson for our own days.

I have felt that this able work in fine material could hardly have had its origin in Britain, but further consideration suggests that the balance of evidence is in our favour. We have seen that other works are in white marble; there are in the British Museum two or three fragments of white marble slabs, while in the London Museum there is a complete one. Several fragments of dado linings are also known. In the heyday of the mosaic pavements there must have been some "firm" of marble importers in London. The general resemblance of the Clapton sarcophagus to that found at Haydon-square is strongly in favour of their common origin. The cover was attached to the receptacle in a similar way with iron straps in both; in each case the flutes are separated by a sunk line. The man's bust is very similar to the upper parts of the figures on the third and fourth steles above described, and very like in "feeling" to that on the Haydon-square tomb. Altogether, I could suppose that both sarcophagi came from one shop, and that they were both the resting places of Christians.

A number of tablets which have been found must have been fixed in some buildings or against walls. At the British Museum is a small fragment with a part of an animal incised, probably one of a pair facing a central object. (Compare the griffins on the enamelled plate found in London, in the British Museum.) Some of these tablets are in Purbeck and other native marbles, and this shows that we had competent marble masons settled here—probably the same as the mosaic workers.

A small tablet, found in Goodman's-fields, about 12×15 in., now at the Society of Antiquaries, was described by Roach Smith as of native green marble; and a fragment in the British Museum, found in Philpot-lane, is of green marble. The former (Fig. 12), judging by the wording of the inscription and style of the lettering, may be dated about 100 A.D.

On the whole these Roman tombs had dignity and beauty, and a study of picked examples throughout Britain would be worth making. The lettering is admirable, and the inscriptions often have a quite human sound which is touching. The portrait reliefs are competent common work. We should now have to go to an R.A. for such things, and come away again without getting them. Some of the symbolic decoration speaks a universal language; the flowering scroll border and festoon of the slab, and the baskets of fruits on the sarcophagus, both in the British Museum, are more than ornaments. A stele at Colchester having a relief of a seated woman putting away her spinning into her workbox is really poetical. The sculpture is crude, but the idea is as fresh and beautiful as any tomb in the world can show.

FIG. 12.

# ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

## Overcrowding the Profession.

THE second of the series of discussions on economic problems being held under the auspices of the Architects' and Surveyors' Assistants' Professional Union was held on Thursday evening last, at Caxton Hall, Westminster, when the subject of discussion was "Overcrowding in the Architectural Profession." The chair was occupied by Mr. H. Denston Funnell.

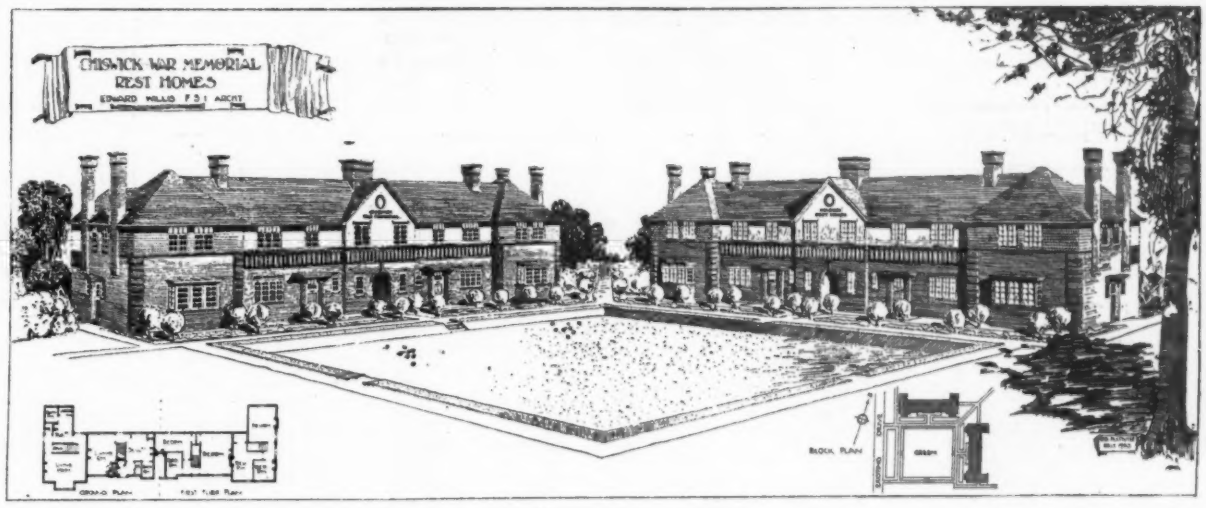
In opening the discussion, MAJOR HARRY BARNES, M.P., F.R.I.B.A., said he quite realised the gravity of the question of overcrowding and unemployment in the architectural profession. The ideal, not only in the architectural profession but in life, was that people should be employed, not continuously up to the extent of their energy and with their whole interest deeply engaged in doing things for remuneration, but to such an extent as to give them leisure to pursue other interests and enjoy life to the full. There were, however, very great difficulties in the way of obtaining that ideal. The problem of overcrowding and consequent unemployment seemed greatest in those industries which were the least organised; the workers in the best-organised industries were able to make provision for themselves. The architectural profession was under special difficulties, the chief of which was that it was carried on by a large number of small practitioners. In America there was a tendency to form very large architectural firms, each employing hnndreds of assistants, and that system offered great possibilities for organisation. In saying that, he did not in any way advocate the formation of big architectural firms, but he thought such a state might come about in the future, with correspondingly greater prospects of organisation on the part of both employers and employed, which would be able to proceed along the lines of other organised industries. He understood, however, that the A. & S.A.P.U. proposed to proceed on the lines of co-operation rather than antagonism with the employers, and was preparing statistics of the number out of employment and of the salaries paid in the profession. That, he thought, was a step in the right direction. He did not agree with the proposal to limit the number of men admitted to the profession, and make it a "closed" profession. If they did that he was convinced they would make it so attractive that even more would wish to enter it, and if men really wanted to get into a profession no examination could be made stiff enough to keep them out.

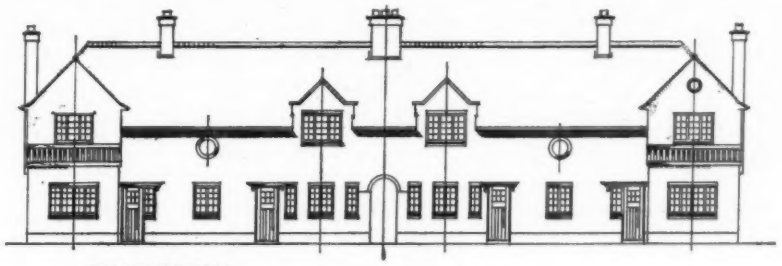
MR. R. A. DUNCAN expressed the opinion that the architectural schools could to some extent regulate the flow of entrants to the profession by examination.

MR. A. W. SHEPPARD said it was necessary to realise that at the present time there was not enough work in the country for architects and their assistants.

MR. W. H. JACKSON said he thought the architectural schools were responsible for a great deal of the present overcrowding by attracting new-comers in large numbers. Since the war, also, many ex-officers had been given two years' intensive training as architects and put into offices to complete their education, with the result that the profession had been flooded with insufficiently trained men to the detriment of those who were fully qualified. The best method of deterring men from entering the profession was to let the public know the real facts as to the amount of unemployment and the salaries paid. He criticised the system of teaching the students to design palatial buildings, such as town halls, palaces, etc., and thereby giving them the impression that that was the kind of work they would do in actual practice, whereas it was most probable their first job would be to get out a half-inch section through a factory wall.

Mr. A. J. Penty, Mr. R. F. Curling, Mr. T. Braddock, and others took part in the discussion.

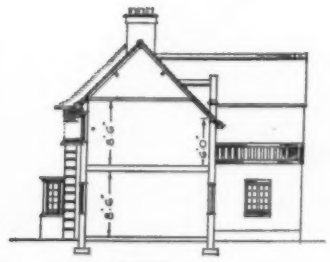


REAR ELEVATION.

CHISWICK · WAR · MEMORIAL ·
REST HOMES FOR
DISABLED SAILORS & SOLDIERS ·

FRONT ELEVATION · (FACING GREEN)



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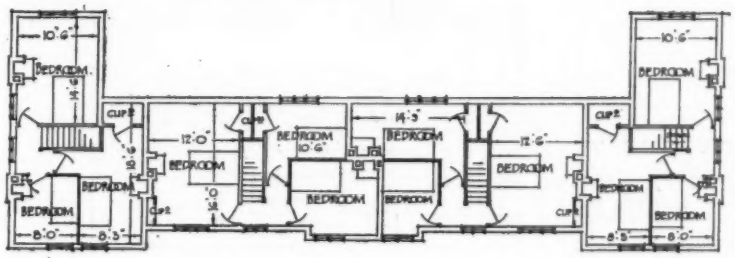
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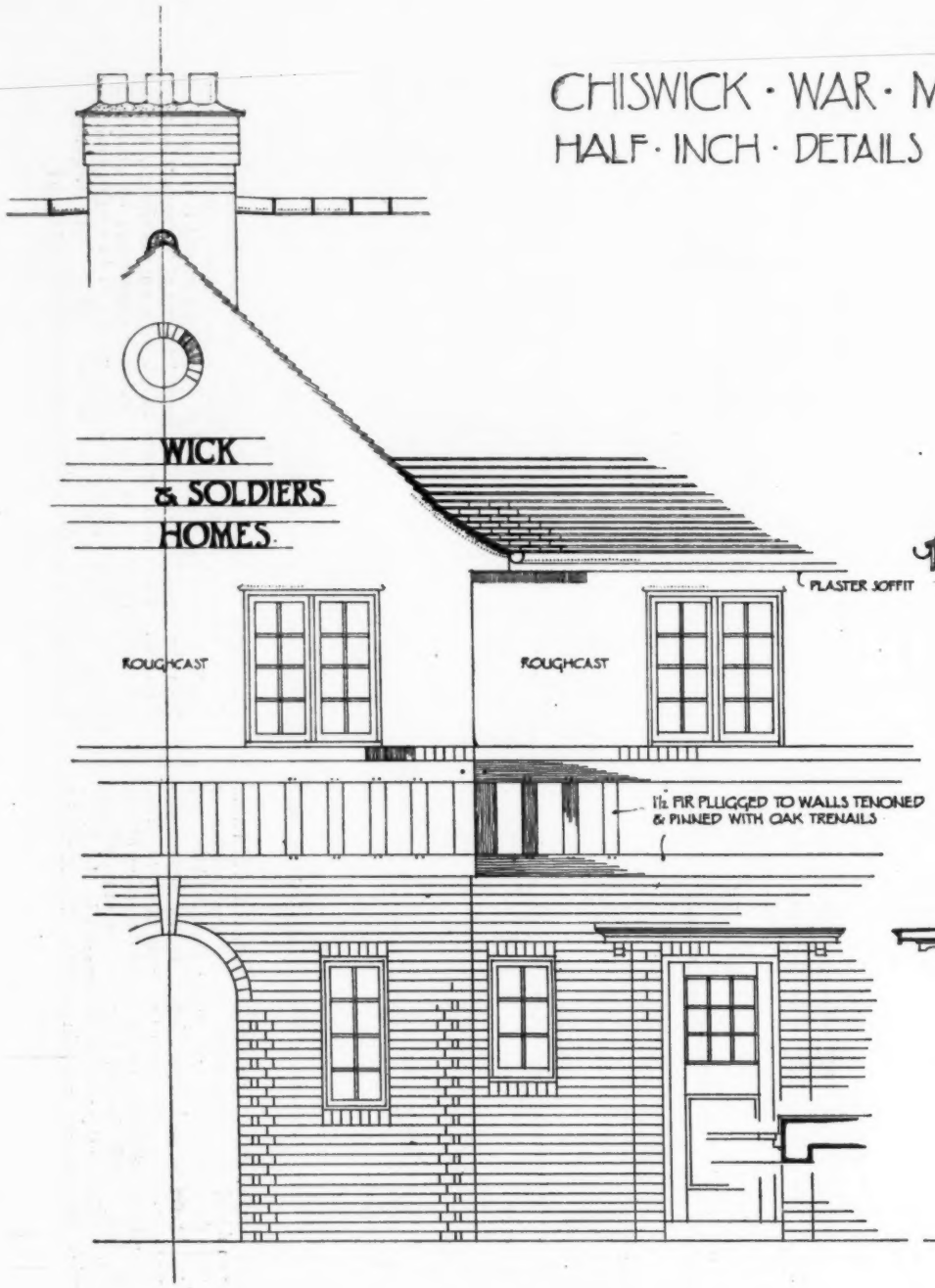
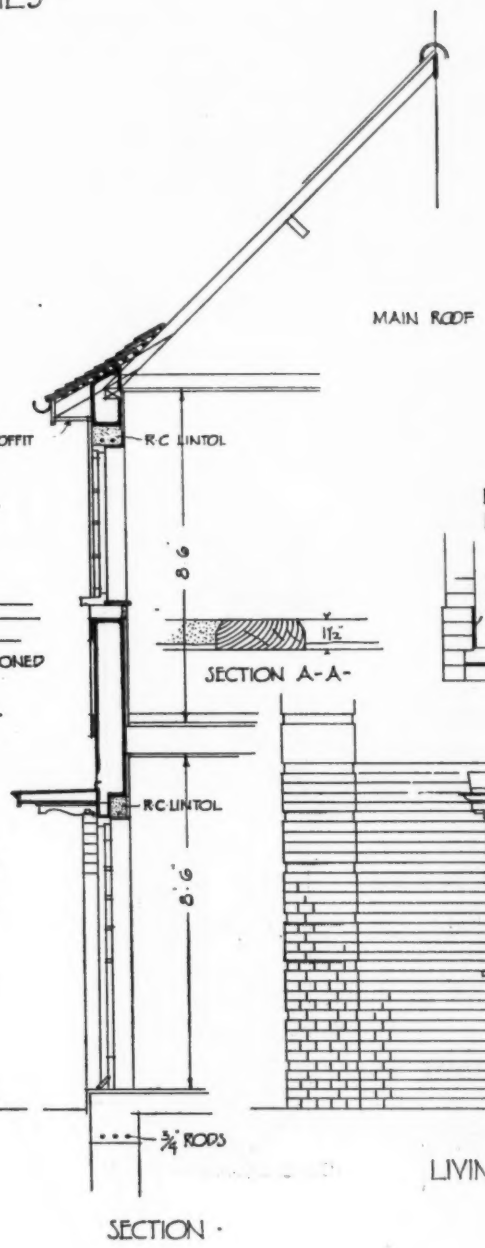
# CHISWICK · WAR · MEMORIAL · HOMES ·

## HALF · INCH · DETAILS ·




CENTRE PORTION · MAIN ELEVATION ·

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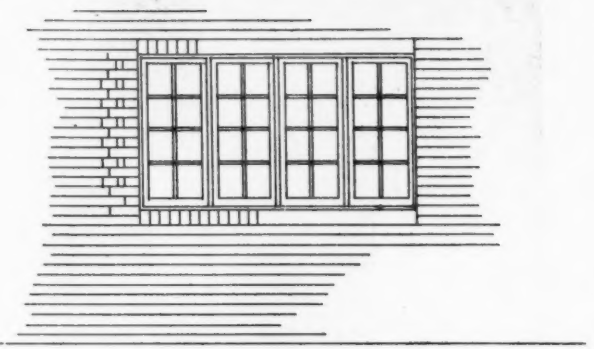
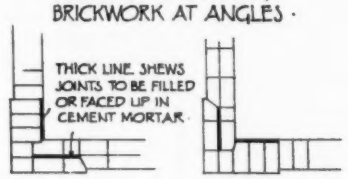
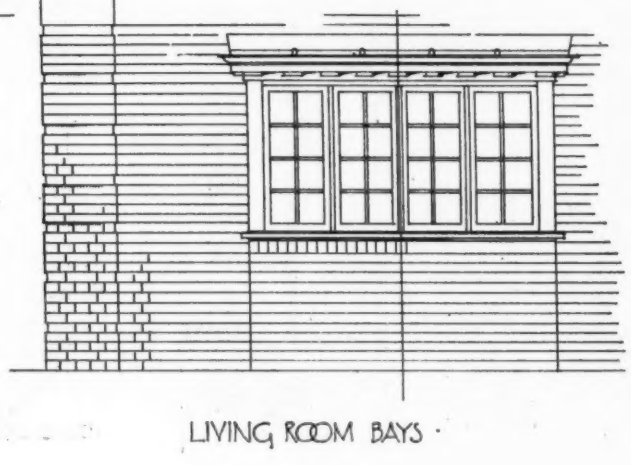
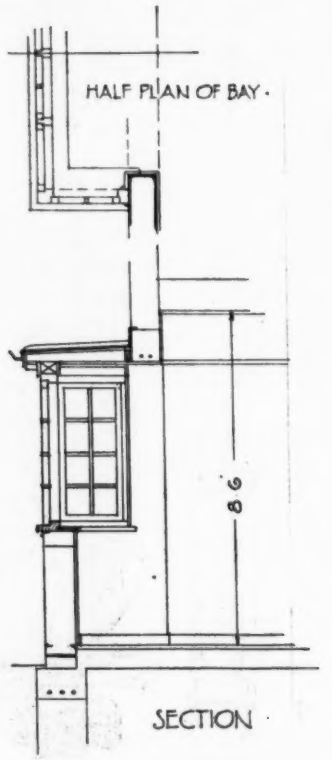


FOUR LIGHT WINDOWS ·



LIVING ROOM BAYS ·




SECTION ·

EDWARD WILLIS FSI
ARCHITECT ·
TOWN HALL CHISWICK W · 22 AUG 21

**Chiswick War Memorial Homes.** MR. EDWARD WILLIS, F.S.I., Architect. (*See p. 525.*)

THE BUILDER [APRIL 7, 1922.

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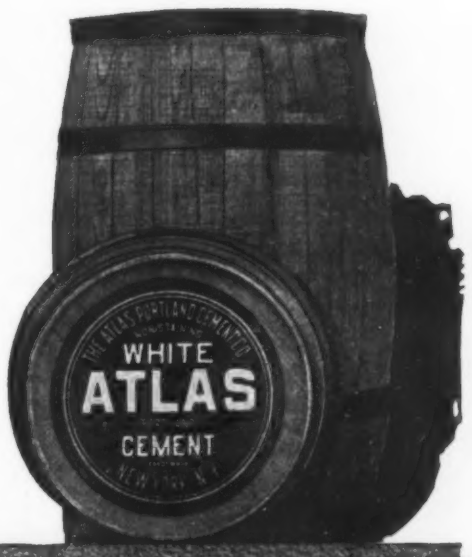


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**ATLAS WHITE**

Chiswick War Memorial Homes. Mr. Edward Willis, F.S.I., Architect. (See p. 526.)

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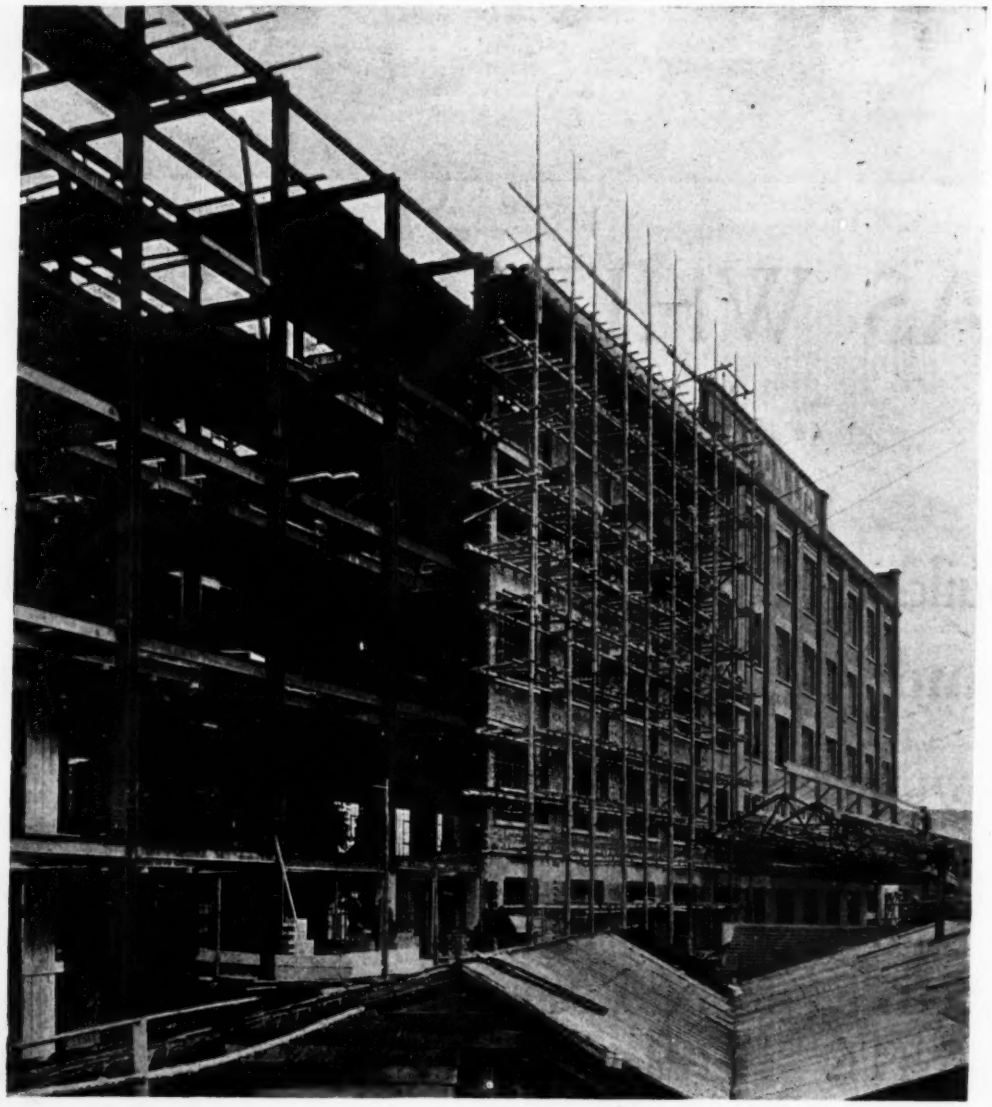

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# THE WEEK IN PARLIAMENT.

WESTMINSTER, *Wednesday.*

### Sale of Building Materials.

SIR A. MOND informed Mr. Mosley that the amount due to the Ministry of Health on December 31, 1921, for building materials supplied by the Ministry to local authorities and other purchasers was, in round figures, £2,900,000. The local authorities concerned had running accounts with the Ministry for materials supplied, on which payments on account were made from time to time. The receipts for the current financial year would amount to some £6,600,000, and it was anticipated that the total sums due on March 31 would again amount to about £2,900,000. Certain items of the outstanding accounts were in dispute, but local authorities were being pressed to clear up those items, and it was hoped that final settlements would be made at an early date.

### Shortage of Plasterers.

Sir A. Mond informed Mr. T. Thomson that the number of plasterers employed on housing schemes of local authorities on October 1 and March 1 last, were 10,021 and 8,804 respectively. At the same time, there was a considerable number of local authorities who reported a shortage of plasterers on March 1. Where there were plasterers available he was endeavouring to allot houses to the local authorities.

### Housing Pledges.

Mr. Trevelyan Thomson asked the Minister of Health how many local authorities had forwarded to the Ministry resolutions calling on the Government to show steadfastness in fulfilling the housing pledges given in 1919?

Sir A. Mond replied that resolutions in a form circulated by a body with which he understood the hon. member was connected, had been forwarded to him by 108 out of the 1,800 housing authorities in the country.

### The Fixing of Rents.

Sir A. Mond informed Mr. G. Edwards that no sanction had been given to the fixing of rents at a definite proportion of the wages of the tenants. The rents approved for a large proportion of the rural parishes of Norfolk were as low as 5s., and no reduction below that figure could be made.

### The Cost of Houses.

Asked by Mr. Stanton if he was aware that the Aberdare council's housing scheme had turned out to be a failure; that the original estimate per house was £750; that only 23 houses had been completed during the last two years; and that the cost had gone over £2,000 per house, Sir A. Mond said that he had already caused a special investigation to be made into the progress and cost of this scheme. The Inspectors' report was now under consideration.

### Local Authorities' View.

Replying to Mr. Myers, who asked if he would circularise the principal local authorities in the country with a view to ascertaining what was their estimated shortage of houses, Sir A. Mond said that he did not think there would be any advantage in moving in this matter at present.

### The Limit of Houses.

Replying to Mr. J. H. Thomas, who asked if he would be influenced if those who wanted houses petitioned him, Sir A. Mond said that he was afraid the limit of houses was laid down by the Government some time ago.

### 120,000 Houses Completed.

Sir A. Mond informed Mr. N. Maclean that the housing schemes of local authorities and the builders' subsidy scheme provided for 218,000 houses. Of these, 120,000 have already been completed. There remained some 98,000 to be finished, and he hoped that a large proportion would be completed during the coming year. He had no information as to the number of applications received by local authorities.

### L.C.C. Progress.

In reply to a question, Sir A. Mond said that the approval originally given to the proposal of the L.C.C. to build 29,000 new dwellings in the course of five years was withdrawn in June last, when the Government decided that, owing to the urgent need for reducing national expenditure, the number of houses to be erected by local authorities in England and Wales with State assistance under the present scheme must be limited. Of the houses which the London County Council had been authorised to build, over 5,200 were in building on March 1, and some 1,500 had not yet been started. They had, therefore, a very considerable programme still in hand.

### Glasgow Schemes.

Mr. Munro (Secretary for Scotland) informed Mr. N. Maclean that at the end of March only 1,003 of the houses sanctioned for Glasgow had been completed; 1,890 were then under construction; and 1,919 had not been commenced. These figures suggested that the building resources of Glasgow would be engaged for a considerable time to come.

### Loans to Private Builders.

Sir A. Mond, replying to Mr. Haslam, said that section 21 of the Housing Act, 1919, the operation of which had been extended, already provided for loans by the Public Works Loan Commissioners to private builders constructing houses for the working classes.

# HOUSING AND TOWN-PLANNING NOTES.

### The Cost of Housing.

Writing to the *Times* on Wednesday, Sir Kingsley Wood said that 123,479 dwellings were completed under State-aided schemes by March 1 last, and there were still to be completed 84,159 houses by local authorities, and 14,000 under the private builders' subsidy. Under the terms of the subsidy the latter had to be completed by the end of June, so that there was a prospect of a large increase in the number of completed houses within a very short time. The capital cost of the houses built and to be built by local authorities would amount to no less a sum than £190,000,000, with an annual loss of some £10,000,000 for a considerable number of years. The Ministry had within the last few days approved tenders received by the Brighton Council for the erection of houses on their Queen's Park site for £400 a house—less than half the cost of the Brighton houses at Moulsecombe. Tenders had been approved at Risca for £388, Chesterfield £391, Carlton £412, Old Fletton £424. Derby Town Council had approved tenders for £425 a house—their municipal houses at present in occupation cost roughly £1,000 each some little time ago. Grimsby and Golcar were building houses at £449 a piece.

The contractors for the erection of the 18 houses at Risca are the Unit Construction Company, Ltd., of Regent-street, W.

The 18 houses form but a part of the contract, which includes both parlour and non-parlour houses. They are to be brick-built and will comprise a living-room, scullery, bath, three bedrooms, and the usual offices. Twelve other non-parlour houses of similar type, but a little larger, are included in the contract, and the tender for these is £404 each. In addition, there are 20 parlour houses, eight of which the Unit Construction Company are prepared to build for £481 each, and the remaining 12 at £491 each. The average price on the contract, therefore, works out at £440 per house.

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Writing to the *Manchester Guardian*, Mr. Norman McKellen, Secretary of the National Federation of House Builders, referred to the statement by the Minister of Health in the House of Commons recently, that he was obtaining houses under the Government housing schemes at £400 each, and to the announcement at a conference of local authorities on housing in Manchester that the cost of building was down "to nearly pre-war figures." Those statements were very misleading, and his object in writing was to warn the large numbers of people who read them and who were inclined to think that the price gave them an indication of what they should pay for houses they might contemplate buying, that the Minister was not referring to their needs when he quoted his figure, and the statement at the Housing Conference was a mistake.

**Chiswick War Memorial.**—MR. E. WILLIS, F.S.I., Architect. (*See p.* 525.)

This memorial, 21 ft. high, is of Cornish granite, with bronze tablet, railing, and chaplet of laurels. The obelisk was executed by Messrs. Fenning & Co., of Hammersmith, and the bronze chaplet by Messrs. Norris & Co., of London. Mr. E. Willis, Engineer and Architect to the Chiswick Urban District Council, acted as Honorary Architect.]

# THE BUILDING TRADES' EXHIBITION.

The Building Exhibition which opens on April 11, at Olympia, and, except for the interval of the Easter holidays, will remain open until the 27th inst., is the third of the series organised by Mr. H. Greville Montgomery since the war, and judging from the information at our disposal and the long list of firms who are exhibiting, the exhibition is likely to be a specially interesting and successful one. In accordance with our practice on previous occasions, we are giving in succeeding issues a full account of the exhibits, and in the present issue we are giving not only a double-page plan of the ground floor of Olympia showing the various stands and their numbers, but a guide to the exhibition in the form of a classified index of the exhibitors in sections, believing that this will be of use in directing visitors in the most convenient way to the various stands and will enable them to find at once any firm or exhibit they specially want. We have no doubt architects and builders will visit the exhibition in large numbers, as well as the general public, all of whom are concerned in the constant developments which are taking place in building appliances and materials. Architects will find the Architects' Welcome Club a convenient place of meeting. The Club will provide a meeting ground, possibly, for those who do not often meet, and it is satisfactory to know that it is being managed by the R.I.B.A., the Society of Architects, and the Architectural Association.

### BRICKS, STONE, MARBLE, ETC.

Anselm Odling & Sons, Ltd. (Stand No. 103, Row F).
Clee Hill Granite Co., Ltd. (Gallery Stand No. 4, Row B).
Collier, S. E., Ltd. (Stand No. 194, Row J).
Collier, W. H., & Co. (Stand No. 176, Row J).
Colthurst, Symons & Co., Ltd. (Stand 185, Row J).
Croft Granite Brick and Concrete Co., Ltd. (Gallery Bay No. 24).
Dean, Hetherington & Co. (Gallery Stand No. 36, Row B).
Eastwoods, Ltd. (Stand No. 121, Row F).
Elm Park & Corsham Down Bath Steel Co., Ltd. (Gallery Stand No. 1, Row B).
Emborough Stone Co., Ltd. (Gallery Stand No. 28, Row B).
Empire Stone Co., Ltd. (Stand No. 86, Row E).
Enderby & Stoney Stanton Granite Co., Ltd. (Gallery Bay No. 27).
Fassio Products, Ltd. (Stand No. 75, Row D).
Fenning & Co., Ltd. (Stand No. 84, Row E).
Hemel Hempstead Patent Brick Co., Ltd. (Stand No. 156, Row H).
Lamb, W. T., & Sons (Stand No. 158, Row H).
Leckhampton Quarries Co., Ltd. (Stand No. 36, Row C).
Low Laithes Colliery Co. (Stand No. 165, Row H).
Major, H. J., & Co., Ltd. (Stand 180, Row J).
Patent Victoria Stone Co., Ltd. (Gallery Stand Nos. 41 & 42, Row B).
Pressed Brickmakers' Association (Stand 119, Row F).
Roberts, Adlard & Co. (Stand No. 85, Row E).
Somerset Trading Co., Ltd. (Stand No. 92, Row E).
Stancliffe Estates Co., Ltd. (Stand No. 78, Row E).
Stoneware, Ltd. (Gallery Stand No. 18, Row B).
Sussex Brick and Estates Co., Ltd. (Stand No. 188 and 189, Row J).
Vectis Stone and Fencing Co., Ltd. (Stand No. 85, Row E).
Webb, Percy C., Ltd. (Stand No. 177, Row J).

### CEMENT & WATERPROOFING MATERIALS

Associated Portland Cement Manufacturers, Ltd. (Stand No. 112, Row F).
British Portland Cement Manufacturers, Ltd. (Stand No. 112, Row F).
Cement Marketing Co., Ltd. (Stand No. 112, Row F).
Concrete Utilities Bureau (Stand No. 110, Row F).
Kerner-Greenwood & Co., Ltd. (Stand No. 46, Row C).
Martin, Earle & Co., Ltd. (Stand No. 112, Row F).
Tidnams, Ltd., "Atlas White" Cement & "Colemanite" (Gallery Bay No. 4a).
Wouldham Cement Co., Ltd. (Stand No. 112, Row F).

### CONSTRUCTION.

Baldwins, Ltd. (Gallery Bay No. 19).
Beaver Board Co. (Stand No. 97, Row E).
Bell's United Asbestos Co., Ltd. (Stand No. 87, Row E).
Blay, Geo. (Stand No. 164, Row H).
Booth, John, & Sons (Stand No. 35, Row C).
British Construction Co. (Gallery Stand No. 14, Row B).
British Everite and Asbestilite Works, Ltd. (Stand No. 151, Row H).
British Fibro-cement Works, Ltd. (Stand No. 134, Row G).
Climbing Steel Shuttering Co. (Stand No. 80, Row E).
C. R. Building Construction, Ltd. (Gallery Stand No. 39, Row B).
Dewhursts (1921), Ltd. (Gallery Bay No. 6).
Diamond Tread Co., Ltd. (Stand No. 181, Row J).
Farrer, W. E., Ltd. (Gallery Stand No. 5, Row B).
Fawcett Construction Co., Ltd. (Stand No. 174, Row J).
Granwood Flooring Co. (Stand No. 82, Row E).
Guild of Builders (Stand No. 217, Row L).
Interloc Construction, Ltd. (Stand No. 45), Row C).
Ironite Co., Ltd. (Stand No. 102, Row F).
King, J. A., & Co. (Stand No. 105, Row F).
Kleine Patent Fire-Resisting Flooring Syndicate, Ltd. (Stand No. 111, Row F).
Knowles, John, & Co. (London), Ltd. (Gallery Stand No. 26, Row F).
Langley, London (Gallery Stand No. 7, Row B).
Manufactured Concrete Works (Gallery Stand No. 14, Row B).
Moler Fireproof Brick and Partition Co., Ltd. (Stand No. 38, Row C).
Morton, B. & Sons (Stand No. 122, Row F).
Morton, Francis, Junr., & Co. (Stand No. 191, Row J).
National Building Guild, Ltd. (Stand No. 217, Row L).
Pollard E., & Co., Ltd. (Stand No. 150, Row H).
Rennie, A. C. (Stand No. 25, Row B).
Rice & Harting, Ltd. (Stand No. 100, Row E).
Rush, C. H. E. (Gallery Stand No. 13a, Row B).
Sage & Co., Ltd. (Stand No. 9, Row B).
Self-Sentering Expanded Metal Works, Ltd. (Stand No. 94, Row E).
Siegwart-Fireproof Floor Co., Ltd. (Stand No. 1, Row A).
Smith, H. P., Ltd. (Gallery Bay, No. 25).
Speaker, G. R., & Co. (Stand No. 142, Row G).
Stanley Bros., Ltd. (Stand No. 137, Row G).
Super Compo-Flooring, Ltd. (Stand No. 39a, Row C).
Swift-Building Co., Ltd. (Stand No. 26, Row B).
Tarrant, W. G., Ltd. (Stand No. 93, Row E).
Toruba Construction Co., Ltd. (Stand No. 169, Row J).
Turner Bros. Asbestos Co., Ltd. (Stand No. 163, Row H).
Wainwright, John, & Co., Ltd. (Gallery Bay No. 16).
Waller, Geo., & Son, Ltd. (Gallery Stand No. 7a, Row B).
Webb Bros., Ltd. (Stand No. 211, Row K).
Wilfley Co., Ltd. (Stand No. 145, Row H).
Xelite Plaster Co., Ltd. (Stand No. 62, Row D).

### HEATING, COOKING, AND VENTILATING APPARATUS.

Ash, Thos., & Co., Ltd. (Stand No. 209, Row L).
Brightside Foundry & Engineering Co., Ltd. (Stand No. 15, Row B).
Cakebread, Robey & Co., Ltd. (Stands No. 48, Row C, and No. 205, Row K).
Carron Co. (Stands No. 220, Row L, and No. 202, Row K).
Davis Gas Stove Co., Ltd. (Stand No. 144, Row H).
Eagle Range & Grate Co. (Stand No. 225, Row L).
Ewart & Son, Ltd. (Stand 197, Row K).
Falkirk Iron Co., Ltd. (Stand No. 16, Row B).
Hurry Water Heater (Stand No. 226, Row L).
International One-Pipe Heater, Ltd. (Stand No. 173, Row J).
Interoven Stove Co., Ltd. (Stand No. 206, Row K).
Jones & Attwood, Ltd. (Stand No. 12, Row B).
London Warming Co., Ltd. (Stand No. 223, Row L).
Moorwoods, Ltd. (Stand No. 14, Row B).
Potterton, Thomas (Stand No. 63, Row D).
Rownson, Drew & Clydesdale, Ltd. (Stand No. 160, Row H).
Smith, Samuel, & Sons, Ltd. (Stand No. 10, Row B).
Smith & Wellstood, Ltd. (Stand No. 219, Row L).
Stimex Gas Stove Co., Ltd. (Stand No. 13, Row B).
Sturtevant Engineering Co., Ltd. (Stand No. 91, Row E).

### LIFTS.

Marryat & Scott, Ltd. (Stand No. 157, Row H).
Medway's Safety Lift Co., Ltd. (Stand No. 64, Row D).
Waygood-Otis, Ltd. (Stand No. 115, Row F).

### MACHINERY AND PLANT.

Alexander, H., & Co., Ltd. (Stand No. 218, Row L).
Australia Concrete Machinery & Engineering Co., Ltd. (Stand No. 116, Row F).
Builders' & Contractors' Plant, Ltd. (Stand No. 124, Row F).
Dominion Engineering Co., Ltd. (Stand No. 23a, Row B).
Empire Runways, Ltd. (Stand No. 3, Row A).
Four Oaks Spraying Machine Co. (Stand No. 28, Row B).
Kennedy, Wm. (Stand No. 49, Row C).
Kirk, R. H., & Co. (Stand No. 18, Row B).
Liner Concrete Machinery Co. (Gallery, Stand No. 3, Row B).
Merryweather, Ltd. (Stand No. 39, Row C).
Millar's Timber & Trading Co., Ltd. (Gallery Bay, No. 5).
Ransome Machinery Co. (1920), Ltd. (Stand No. 195, Row K).
Stothert & Pitt, Ltd. (Stand No. 42, Row C).
Sutcliffe, Speakman & Co., Ltd. (Stand No. 165, Row J).
Vickers, Ltd. (Stand No. 128, Row G,)
Whitaker, R. G., Ltd. (Stand No. 120, Row F).
Wilde, Henry, Ltd. (Stand No. 83, Row E).
Winget, Ltd. (Stand No. 127, Row G).

### PAINTS, VARNISHES, ENAMELS, DISTEMPERS, &c.

Bayley & Halstead (Gallery, Stand No. 32, Row B).
British Emaillite Co., Ltd. (Stand No. 130, Row G).
Carson, Walter, & Sons (Stand No. 203, Row K).
Cuirass Products, Ltd. (Stand No. 29, Row L).

Celesco Paint Co. (Stand No. 29, Row B).
Greeff, R. W., & Co., Ltd. (Stand No. 168, Row J).
Hadfields (Merton), Ltd. (Stand No. 88, Row E).
Harland, Wm., & Son, Ltd. (Stand No. 152, Row H).
Major & Co., Ltd. (Stand No. 104, Row F).
Musselwhite, C. H., & Son (Stand No. 76a, Row D).
Ottley & Ellson, Ltd. (Stand No. 170, Row J).
Parsons, Thos., & Sons (Stand No. 125, Row G)
Peters, C. A., Ltd. (Stand No. 67, Row D).
Plaster Paint, Ltd. (Stand No. 7, Row B).
Rippers, Ltd. (Stand No. 43, Row C).

### REINFORCEMENT.

Barb Engineering Co. (Gallery Stand No. 33, Row B).
British Reinforced Concrete Engineering Co., Ltd. (Gallery Bays Nos. 1 & 2).
Brown & Tawse, Ltd. (Gallery Bay Stand No. 20).
Expanded Metal Co., Ltd. (Stand No. 144, Row G).
Johnson's Reinforced Concrete Engineering Co., Ltd. (Stand No. 114, Row F).
Walker-Weston Co., Ltd. (Gallery Bay No. 7).

### ROAD MATERIALS AND MACHINERY.

Allan, Taylor & Co. (Gallery Stand No. 6, Row B).
British Macadams, Ltd. (Gallery Bay No. 14).
Durable Roads, Ltd. (Gallery Stand No. 20, Row B).
Eddison Steam Rolling Co., Ltd. (Gallery Bay No. 21).
Hobman, A. C. W., & Co. (Gallery Stand No. 11, Row B).
Laffly (England) Co. (Gallery Stand No. 25, Row B).
Limmer & Trinidad Lake Asphalte Co., Ltd. (Gallery Bays Nos. 16a & 22, Row B).
Oxford Steam Plough Co., Ltd. (Gallery Bay No. 1.).
Patent Lightning Crusher Co., Ltd. (Gallery Stand No. 17, Row B).
Phœnix Engineering Co., Ltd. (Gallery Stand No. 9, Row B).
Premier Bitumen & Asphalte Co., Ltd. (Gallery Stand No. 19, Row B).
Sharp, Jones & Co. (Stand No. 153, Row H).
United Bitumen & Asphalte Supply Co. (Gallery Stand No. 15, Row B).
Weeks, W., & Son, Ltd. (Gallery Stand No. 35, Row B).

### ROOFING MATERIALS.

Anderson & Son, Ltd. (Stand No. 113, Row F).
Blackwell, R. W., & Co., Ltd. (Stand No. 154, Row H).
British Roofing Co., Ltd. (Stand No. 60, Row D).
Callender & Co., Ltd. (Stand No. 65, Row D).
McNeill, F., & Co., Ltd. (Stand No. 178, Row J).
Vulcanite, Ltd. (Stand No. 98, Row E).

### SAFES.

Dreadnought Fireproof Doors, Ltd. (Stand No. 3, Row A).
Tann, John, Ltd. (Stand No. 44, Row C).

### SANITARY APPLIANCES.

Cornes & Haighton (Std. No. 228, Row L).
Doulton & Co., Ltd. (Stand Nos. 131 and 132, Row G).
Moule's Earth Closet (Std. No. 66, Row D).
Patent Tip-Up Bath Co. (Stand No. 27, Row B).
Tuke & Bell, Ltd. (Stand No. 61, Row D).

### SCAFFOLDING, LADDERS & FENCING.

Acme Patent Ladder Co. (Stand No. 167, Row J).
Cardou & Co., Ltd. (Stand No. 57, Row C).
Carter & Co., Ltd. (Stand No. 101, Row F).
Cayless Bros. (Gallery Bay No. 13).
Cripples, Ltd. (Stand No. 23, Row B).
Drew, Clarke & Co. (Stand No. 74, Row D; and No. 199, Row K).
Fernden Fencing Co. (Std No. 41, Row C).
Gripwell Staging Co. (Std. No. 216, Row K).
Palmer, T. W., & Co. (Gallery Stand No. 3, Row B).
Patent Rapid Scaffold (Tie) Co., Ltd. (Stand No. 68, Row D).
Slingsby, H. C. (Stand No. 50, Row C).
Smith's Builders' Accessories, Ltd. (Stand No. 8, Row B).
Stephens & Carter, Ltd. (Gallery Bay No. 3).
Tubular Scaffolding Co., Ltd. (Stand No. 69, Row D).
Underriver Ladder Works (Gallery Bay No. 8).

### STEEL WINDOWS.

Crittall Manufacturing Co., Ltd. (Stand No. 143, Row G).
Williams & Williams, Ltd. (Stand No. 138, Row G).

### WOODWORK AND JOINERY.

Bath Cabinet Makers Co., Ltd. (Stand No. 106, Row F).
Borst Bros. (Stand No. 81, Row E).
Boulton & Paul, Ltd. (Stand No. 179, Row J).
Bryce, White & Co. (Std. No. 190, Row J).
Burt, Boulton & Haywood, Ltd. (Stand No. 179, Row J).
Buss & Elston (Stand No. 222, Row L).
Colman, T. B., & Sons, Ltd. (Stand No. 90, Row E).
Elliott, Samuel, & Sons (Reading) Ltd. (Stand No. 184, Row J).
Gliksten, J., & Son, Ltd. (Stand No. 77a, Row E).
Goldberg & Sons, Ltd. (Stand No. 172, Row J).
Johnson, Robert, & Co., Ltd. (Stand Nos. 146 and 147, Row H).
Latham, James, Ltd. (Stand Nos. 136 and 139, Row G).
London Plywood Manufacturing Co. (Stand No. 126, Row G).
Mallinson, Wm., & Sons, Ltd. (Stand No. 204, Row K)
North of England School Furnishing Co., Ltd. (Stand No. 171, Row J).
Oliver, Wm., & Sons, Ltd. (Stand Nos. 4 and 5, Row A).
Soole, S. N., & Sons (Std. No. 192, Row J).
Thames Paper Co. (Stand No. 140, Row G).
Venesta, Ltd. (Stand No. 95, Row E).
Vi-Board, Ltd. (Gallery Stand No. 13a, Row B).
Western & Southern Counties Home-Grown Timber Merchants' Association (Gallery Stand No. 21, Row B).
White, Jno. P., & Sons, Ltd. (Stand No. 183, Row J)
Young Firm, The (Stands No. 129, Row G; and 159, Row H).

### WOODWORKING MACHINERY.

Clark's Machine Tool Co., Ltd. (Stand No. 76, Row D).
Cooksley, A. (Stand No. 70, Row D).
Danckaerts Woodworking Machinery (Stand No. 20., Row K).
Dominion Machinery Co., Ltd. (Stand No. 23a, Row B).
Haighs (Oldham), Ltd. (Stand No. 40, Row C).
Imperial Woodworking Machinery Co. (Stand No. 161, Row H).
Monninger, C. D., Ltd. (Stand No 117, Row F).
Sagar, J., & Co., Ltd. (Stand No. 2, Row A).
Victor, J. A. (Stand No. 201, Row K).
Wadkin & Co. (Stand No. 198, Row K).

### MISCELLANEOUS.

Aerograph Co., Ltd. (Stand No. 54, Row D).
Albany Forge, Wainwright & Waring, Ltd. (Stand No. 56, Row D).
Art Metal Equipment Co., Ltd. (Stand No. 133, Row G).
Ashley Trading Co., Ltd. (Stand No. 173a, Row J).
Austin, James, & Sons, Ltd. (Stand No. 96, Row E).
Baldwins, Ltd. (Gallery Bay No. 19).
Batsford, B. T., Ltd. (Stand No. 125a, Row G).
Bramston, Geo. (Stand Nos. 33 and 34, Row C).
Brilliant Sign Co. (1907), Ltd. (Stand No. 155, Row H).
British Opalograph Co., Ltd. (Gallery Stand No. 1a, Row B).
British Vacuum Cleaner Co., Ltd. (Stand No. 221, Row L).
Brooks, Vincent, Day & Son, Ltd. (Gallery Stand No. 40, Row B).
Building Products, Ltd. (Stand No. 59, Row D).
Chadwick & Shapcott, Ltd. (Stand No. 135, Row G).
Changeable Sign Co., Ltd. (Stand No. 6, Row B).
Crowe, G. E. W. (Stand No. 216a, Row L).
Dickie, David, Ltd. (Stand No. 24, Row B).
"Eas lit" Blow Lamp Co., Ltd. (Stand No. 210, Row L).
Educational Supply Association, Ltd. (Stand No. 58, Row D).
Fairfield Supplies Co., Ltd. (Gallery Stand No. 34, Row B).
Fawley & Coyle, Ltd. (Stand No. 175, Row J).
Ferodo, Ltd. (Stand 57, Row D).
Gawthorp & Sons (Stand No. 31, Row C).
Gaze, W. H., & Sons, Ltd. (Stand No. 22a, Row B).
Graphite Oils Co., Ltd. (Gallery Stand No. 4, Row B).
Hart, H. (Stand No. 52, Row D).
Harvey, G. A., & Co. (London), Ltd. (Stand No. 17, Row B).
Hayter, J. T., & Co. (Stand No. 21, Row B).
Heffer, Scott & Co., Ltd. (Stand No. 146, Row H).
Jackson, J., Ltd. (Stand No. 212, Row K).
Jennings, Ltd. (Stand No. 77, Row E).
"J. M." Curtain Rod Co. (Stand No. 149, Row H).
Johnson Brothers (Gallery Stand No. 24, Row B).
Joyce (Stand No. 213, Row L).
Kent Brush Co., Ltd. (Gallery Stand No. 38, Row B).
Kirkwood, Craig & Co. (Stand No. 20, Row B).
Landon Manufacturing Co., Ltd. (Stand No. 11, Row B).
Marx & Co. (Stand No. 71, Row D).
Melhuish, Richard (Stand No. 28a, Row B).
Metacon Patent Glazing Bar Co., Ltd. (Stand No. 193, Row .).
Nettlefold & Sons, Ltd. (Stand No. 107, Row F).
Nicholson, W. T., & Clipper Co., Ltd. (Stand No. 187, Row J).
Pagoda Cowl, Ltd. (Stand No. 215, Row K).
Partridge's Models (Stand No. 32, Row C).
Peters, C. A., & Co. (Stand No. 67, Row D).
Quicksey Cabinet Co. (Stand No. 47, Row C).
Rawlplug Co., Ltd. (Stand No. 53, Row D).
Reliable Products (Stand No. 73, Row D).
Rennie & Co. (Stand No. 25, Row B).
Rhodes Chains, Ltd. (Std. No. 182, Row J).
Ronuk, Ltd. (Stand No. 109, Row F).
Sanderson, A., & Sons, Ltd. (Stand No. 108, Row F).
Shell-Mex, Ltd. (Gallery Bays Nos. 9 and 10).
Staines Kitchen Equipment Co. (Stand No. 79, Row E).
Telephone Manufacturing Co. (1920), Ltd. (Gallery Bay No. 12).
Thomas & Bishop, Ltd. (Stand No. 229, Row L).
Torrance & Sons (Stand No. 196, Row K).
Tredegars, Ltd. (Stand No. 55, Row D).
Ward, E. A., & Co. (Stand No. 207, Row K).
Webb & Foulger (Stand No. 72, Row D).
Wippell, J., & Co., Ltd. (Stand No. 30, Row C).
Wright, J. & E., Ltd. (Stand No. 227, Row L).
Wright & Son (Gallery Stand No. 10, Row B).
Yates, John, & Co., Ltd. (Gallery Stand No. 16, Row B).

# ELECTRIC LIFT EQUIPMENT FOR MODERN BUILDINGS.—II.

BY RONALD GRIERSON, A.M.I.E.E., A.M.I.Mech.E.

### Introduction.

In the previous article, published in *The Builder* for January 6, an endeavour was made to touch upon the main points of lift equipment as they affect the general design and lay-out of the building, and equipment details were only briefly referred to. A considerable amount of interest was evinced in that article, and complaint was made, in the correspondence columns, that no reference had been made to safety devices. It is therefore proposed to discuss in this and in subsequent articles each item which forms part of the equipment of a modern electric lift.

### Cars.

The floor space required and the arrangement of openings having been decided on the lines suggested in the previous article, the next point for consideration is the material of which the car is to be made and the general design.

Hitherto English practice has favoured hard wood exclusively or a wainscot of wood to a height of 4 ft. surmounted by a wrought-iron cresting, the top being left open or covered as desired (Figs. 3 and 4).

American practice, on the other hand, favours steel frame cars, both for the ordinary and the more expensive types of buildings, as they can be designed and finished to suit all tastes, and either painted or electro-bronze plated. For special work bronze is used, and this can, of course, be plated in any colour, but architects usually prefer to leave it in its natural colour (Figs. 5 and 6).

Wood cars are most frequently made of basswood, American oak, mahogany, or teak, the former being the cheapest and the latter the most expensive (Figs. 1 and 2).

Grille work, where used, should be designed to prevent the passage of a hand or arm, but where a more open design is required danger can be eliminated by the use of plate-glass panels or fine-mesh wire. In New York City the Elevator Regulations do not permit more than 1 in. of space between the bars or mesh work where scroll work is not used, and not more than 1½ in. between the bars or mesh work where scroll work is used.

The open-top type of car, shown in Fig. 3, is more suitable for hot countries than for high-speed work in the British Isles, but it has the merit of cheapness where first cost is of prime importance. In addition to the draught objection, there is no protection for passengers from oil leakage from the overhead gear or engine, which it is almost impossible to avoid. When used, the lower wood wainscot should be carried to a minimum height of 4 ft. above the platform. If the height is less there is a considerable risk of passengers, both young and old, absent-mindedly slipping fingers or hands through the bars or meshwork, and possibly suffering injury by the counterweights, landings, etc., when the car is in motion.

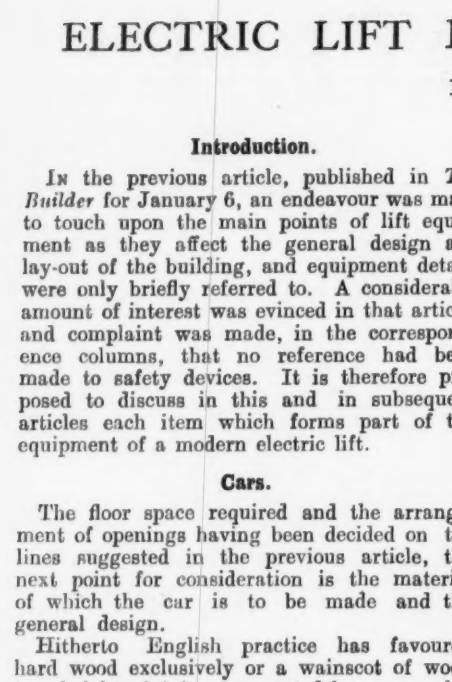


Fig. 1.—Panelled Wood Car with Mirror.

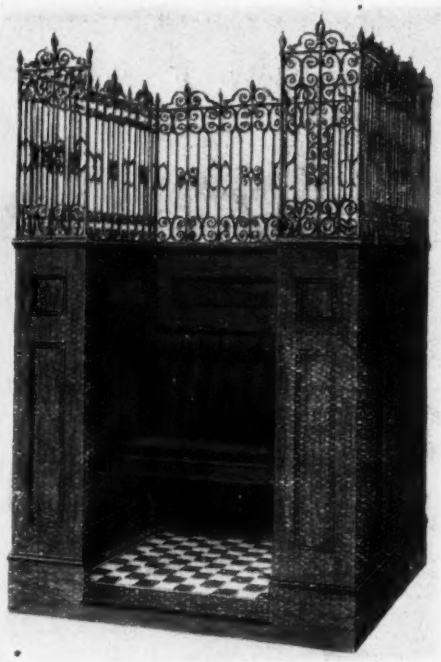


Fig. 3.—Hard-wood Car with Wrought-iron Cresting and Seat.

In the enclosed type of wood and metal cars mirrors are very popular, but seats are not frequently fitted in modern lifts as they occupy valuable floor space. Where a seat is considered desirable, it should be of the hinged type, so that it may be folded up during periods of heavy traffic.

When cars are to be installed in the wells of main staircases in the more expensive types of buildings it will probably be found desirable to specify moulding and polishing for the outside and also for the bottom of the car in addition to the interior. Overhanging external mouldings should be avoided, as they reduce the floor space in the car, and hence the passenger accommodation.

American Elevator Regulations, in many cities, call for escape doors to be fitted in the canopy, or, where two or more cars run in one shaft, means of exit may be provided in the side of the cars for use in the event of emergency (Fig. 7).

Emergency telephones or call bells are also occasionally fitted in cars running in enclosed shafts, so that in the event of anything unusual occurring the car conductor or operator can obtain assistance without loss of time.

Electric light fittings, with the necessary connections, are usually regarded by makers as an extra, and, where required, should be definitely specified.

Collapsible gates, formed of half-inch steel bars, top hung, complete with top and bottom tracks and electrically and mechanically interlocked in such a manner that the car cannot move until the gate is closed and latched, are strongly recommended for all car openings. In the absence of a gate it is always possible for a passenger's shoulder, head, foot, etc., to be caught on a floor or ceiling, resulting in a severe blow or perhaps a serious accident. The objection to their use is increased capital cost (very small), reduction of width of opening, and increase in the time required for the round trip (due to the additional time absorbed at each stop in opening and shutting the gate), and additional weight of the car. Actually a ½-in. picket gate five feet wide when extended weighs about five pounds per square foot, and occupies a space, when collapsed, of 6½ in. in width and is 1⅝ in. thick (Fig. 8A).

For use in schools, children's hospitals and similar purposes an improved type of collapsible gate is available in which the spaces are reduced and danger is thus practically eliminated (Fig. 8B). It is interesting to note in this connection that the Underground Railway lift gates have now been fitted with short iron bars to prevent passengers putting their feet through the spaces.

The standard floor finish for the car is either linoleum or ½-in. compressed cork, completed with chequered brass nosing, finished flush with the cork.

The "Ricketts" threshold-illuminator is rapidly becoming popular. This consists of a bronze threshold, having glass discs on the top and on the vertical face in the shaft through which a diffused light is thrown, illuminating the landing, and showing the relative position of the car floor to the sill of the door. These illuminated thresholds are, without doubt, extremely useful in preventing accidents due to careless floor levelling, and, since they serve to draw attention to any step, either up or down, which may be formed between the car

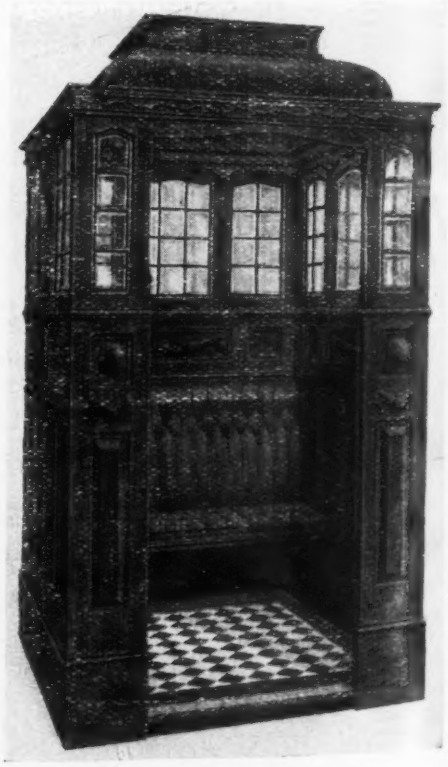


Fig. 2.—Hard-wood Car with Seat and Bevelled-glass Panels.

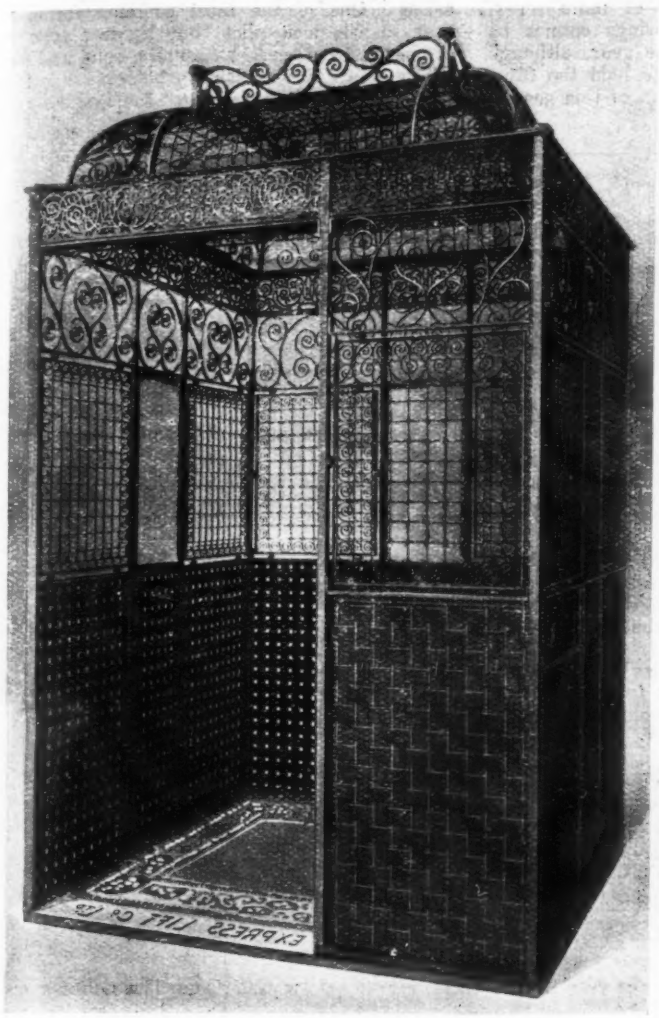


Fig. 5.—Steel-frame Car with Wire Panels (Incombustible).

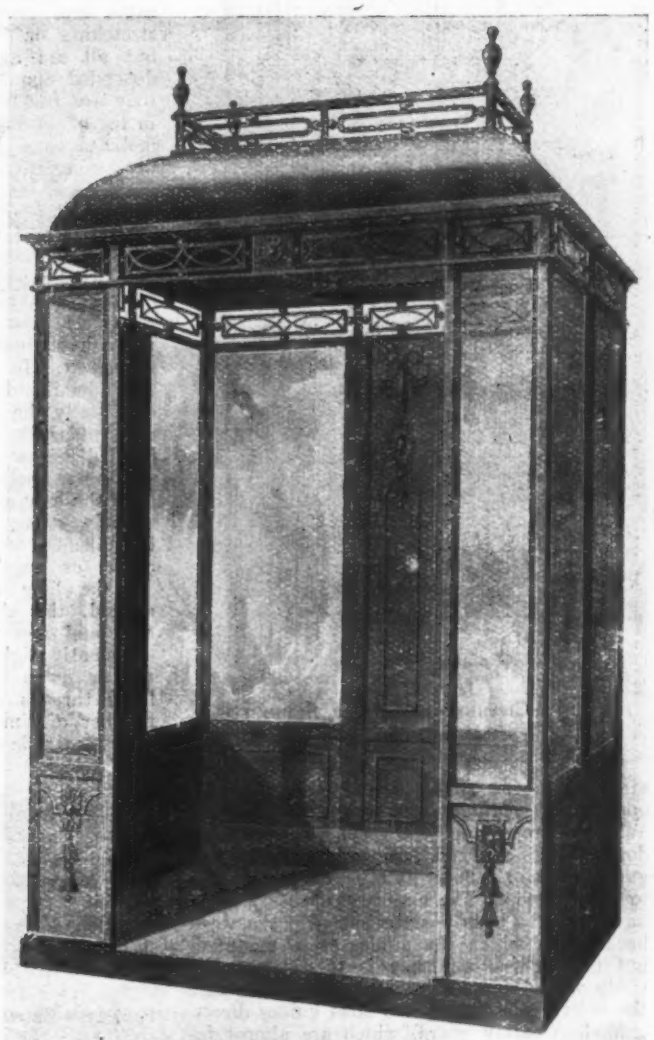


Fig. 6.—Steel-frame Car with Glass Panels (Incombustible).

platform and the landing, they are suitable for installation in all large stores, hotels, flats, etc. (Fig. 9).

Capacity plates, say 3 in. by 2 in., stating the maximum number of passengers and the equivalent weight to be carried, should invariably be fixed in the car to avoid risk of overloading.

### Car Sling, Safety Gear, and Guide Shoes.

In the modern type of construction adopted by all the leading makers the car is regarded as an entirely separate unit, and is placed upon a platform which is carried by the ropes by means of a steel sling or frame (Fig. 10). This sling must be of ample strength and rigidity, so that no strain can under any circumstances be thrown on the cabinet work due to any unsymmetrical loading of the floor or other cause. In addition to its function as the car support, the sling is also arranged to carry the safety gear (which is designed to prevent the further descent of the car in the event of failure or undue stretching of one or more of the ropes) and the guide shoes or lugs which engage the guides or runners and are the equivalent of the wheels of an ordinary railway coach or tramcar running on a horizontal track. The designs for the car sling, safety gear, and guide shoes adopted by leading makers differ considerably, and, generally speaking, there is little to choose between them. It will be realised that it is impossible to describe the features of each design in detail in the limited space available, but if the fundamental features are discussed no difficulty should be experienced by the architect or the engineer in selecting suitable equipment to meet the requirements of any installation in which he may be interested.

The essentials of any type of car sling or

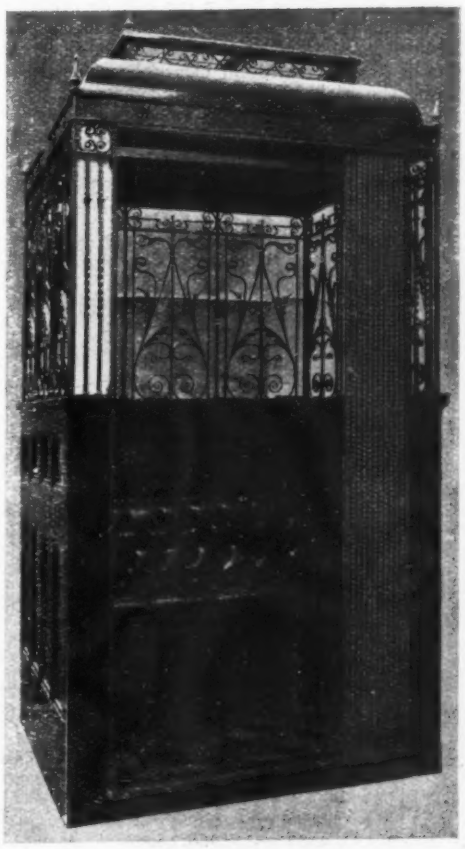


Fig. 4.—Hard-wood Car with Wrought-iron Cresting and Domed Roof.

frame are a top main suspension beam or bar of steel by which it is lifted, two steel vertical posts or styles, and a bottom cross beam which carries the platform, all securely rivetted together, to form a rectangular framework. By using steel channels for both styles and the top main suspension bar, and by using two bottom beams made of channel steel also, an exceedingly strong frame can be constructed. Frequently for the ordinary sizes of cars the bottom channel beams are omitted and heavy wood or round bar construction is adopted.

Details of platform construction depend on the arrangement of the guide rails. Where side guide rails are used then the problem is comparatively simple, as it resolves itself into one or two beams supported at the centre (on the vertical styles) and at either end (by stay rods), more or less uniformly loaded by decking and passengers. On the other hand, if cross corner guide rails are necessary, then the problem becomes more complicated, as it means that a rectangular or square floor has to be carried on one diagonal beam, which, mechanically, is not a desirable arrangement. For small lifts ample strength can be obtained by framing the platform in steel and utilising double channels for the lower beam, but for large cars secondary top and bottom beams, with tie rods, arranged on the other diagonal must be adopted. At best a cross corner sling is but a makeshift, used only where it cannot be avoided. Any unsymmetrical loading of the car has a tendency to rock or twist the top main suspension beam, which should be made heavier, and hence this type of sling is usually more expensive.

Up to about the year 1880 cast-iron racks or ratchets were attached to the guides, and a pair of dogs, fixed at the top of the car,

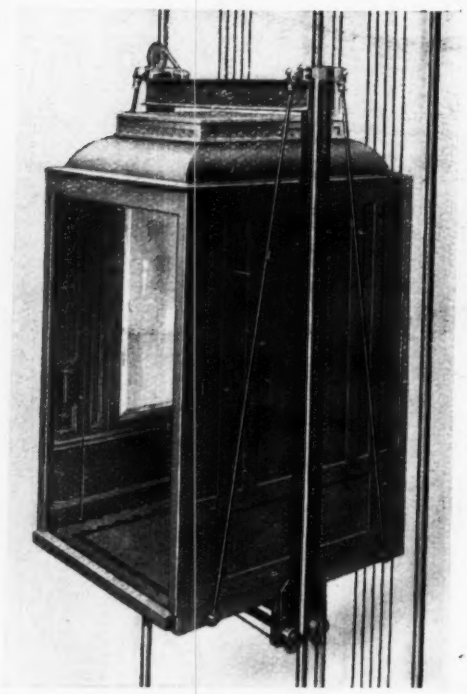


FIG. 10.—CHANNEL-STEEL CAR SLING FOR SIDE GUIDE-RAILS.

attached to the single suspension rope, and operated by springs, formed the safety gear. When the rope failed the springs operated the dogs, which engaged with the racks on the guide posts and immediately brought the car to a dead stop. The majority of safety gears have hitherto been designed to grip the wood backing on which the guides were mounted, but the modern tendency is to dispense entirely with the wood backing and to arrange the safety gear to grip the steel guides direct.

Modern safety gears, which are almost invariably fitted below the car, may be divided into two main types:

(*a*) Simple, quick acting.
(*b*) Gear or screw driven, slow acting.

The former type, which is suitable for speeds up to about 125 ft. per minute, consists of four serrated steel cams mounted on turned steel rods (Fig. 11). Various methods are adopted by individual makers to bring these cams into contact with the guides on the stretching or failure of one or more ropes, but all are agreed that springs cannot be depended upon to operate the gear, although they are frequently utilised to hold the cams in the off position. The action of this gear is instantaneous, and it is not therefore used on high-speed lifts, as the sudden stop of the car in its descent would be most unpleasant if not actually dangerous.

For high-speed lifts, relatively slow retardation has been found necessary. In this case also details differ, but essentially the gear consists of right- and left-handed screw-threaded shafts or bolts, which open the long ends of extremely strong tweezers by means of wedges, cams, or toggle joints. As the long ends are opened, the short ends close and grip the guides sufficiently tightly to hold the car. As the nut or drum in which the right- and left-hand threads are formed has to revolve a number of times before the full pressure of the tweezers is exerted on the guides, the car is brought gradually to rest without sudden shock or jerk while falling a distance of from 5 to 10 ft. according to the adjustment (Fig. 12). Tests in New York on lifts rated for 600 ft. per minute have proved that a car can be brought to rest in a space of 10 ft. without serious inconvenience to the passengers. Guide grips should have a minimum clearance of ¼ in. to avoid the risk of their being brought into action accidentally. With either type of safety gear the arrangement should be such that it is unnecessary for anyone to go below the car in order to release it after operation.

Various methods are adopted to cause the safety gear to operate when the necessity arises. One of the most common forms is that in which a pilot, but lighter, rope is connected between the counterweight and the safety gear. Should tension be applied to this rope due to the elongation of the main lifting ropes action follows immediately. Another method is to carry the main lifting ropes down to the underside of the car and then to connect them to the safety gear, which is held by them, in the off position.

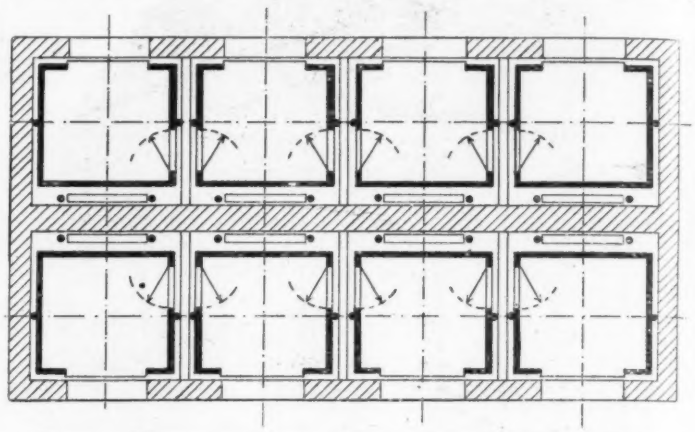


FIG. 7.—BATTERY OF EIGHT LIFTS, SHOWING ESCAPE DOORS BETWEEN CARS.

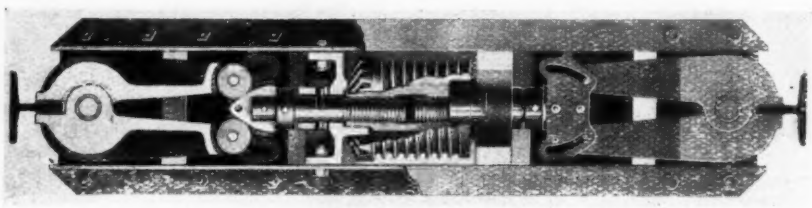


FIG. 12.—SLOW-ACTING, TWEEZER-TYPE SAFETY GEAR, FITTED BELOW CAR; FOR TEE GUIDE-RAILS.

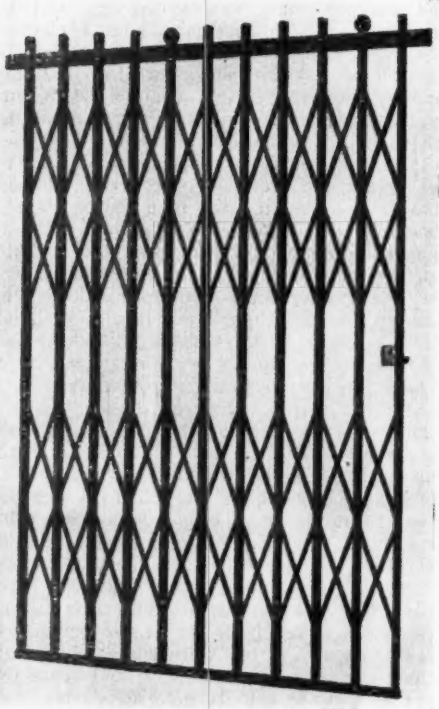
The tweezer type of safety gear is almost invariably operated by means of a pilot rope which passes over and drives the sheave of a centrifugal governor, located at the top of the shaft. Should the speed of the descending car exceed the normal by more than a small amount, the design is such that the pilot rope is gripped, and as the car continues to descend the drum of the safety gear is rotated, thus causing the tweezers to function.

Governors are usually set to operate at 140 per cent. of contract speed, and the specification frequently limits the cant of the car floor, after operation, to ½ in. per foot of length between the guide rails.

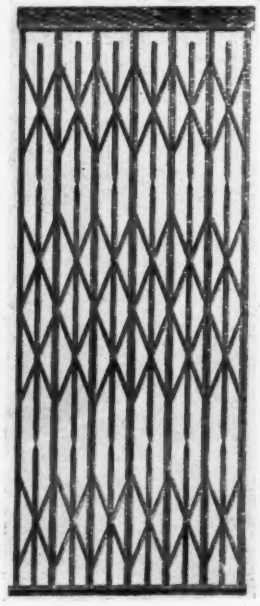
Four guide shoes are almost invariably used and are secured to the car sling at the upper and lower corners. The actual design of the shoe naturally depends on the shape of the guide rail. In its simplest form, when used in connection with a wood guide rail, it is of cast iron channel shape. For modern "tee" guides of steel, self-acting, spring-loaded, gun-metal guide shoes are used (Fig. 13).

### Guide Rails.

Guide rails both for cars and counterweights have passed through several stages of development as the height of buildings has increased and higher speeds and larger cars have been demanded. The essential features of lift guides are that they shall be perfectly parallel throughout their entire length, free from risk of distortion, wear-resisting at high speeds, and dead smooth from top to bottom. In the early days solid lengths of timber were used, being either 6 in. by 6 in., 6 in. by 8 in., or 8 in. by 10 in., depending on the size of the installation. These timbers were dressed on all four sides and faced with maple, beech, or other hard wood. Due to trouble through cracking, twisting, and bending, this type was superseded in America by the sectional or compound wood post, formed by fastening together three or four 2 in., well-seasoned planks 6, 8, or 10 in. wide. Joints



"A."—ORDINARY TYPE.



"B."—"RAX" PATENT MID-BAR.

FIG. 8.—COLLAPSIBLE STEEL CAR AND LANDING GATES (TOP HUNG).

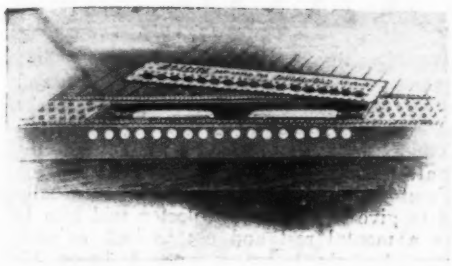


Fig. 9.—Rickett's Threshold Illuminator.

between lengths of guides were lapped, and in this way a practically endless guide was obtained. The backing so formed was then faced with 2¼ in. by 2½ in. maple, beech, or other hard wood, made in short lengths and secured to it by countersunk wood screws. At one end a groove was formed and at the other a tongue, and in this manner a perfectly smooth-running rail was obtained.

English practice still favours the solid-wood guide for cheap, slow-speed, light-duty lifts, 2¼ in. square teak, mounted on a pine-wood backing, being recommended by one maker for 10 cwt. lifts up to 150 ft. per minute. Other makers retain wood only for goods lifts, using thoroughly-seasoned yellow deal or Oregon pine, planed true on all sides, having scarfed joints and a section of 3¾ in. by 3¾ in. The same maker also retains wood guides for the counterweights, but in this case the guides are grooved, to correspond with tongues cast on the counterweights. In all cases where wood guides are used copious lubrication is essential, not only to minimise friction but to protect them from the influence of the weather.

Immediately the demand for high speeds arose it became evident to lift engineers that for smooth and durable operation some form of steel guide was essential, although some felt that the wood backing should still be retained in connection with the car safety gear. The earliest form was a cast-iron backing with a maple face, but this rapidly gave place to a " T " section steel bar in America and a round bar in this country.

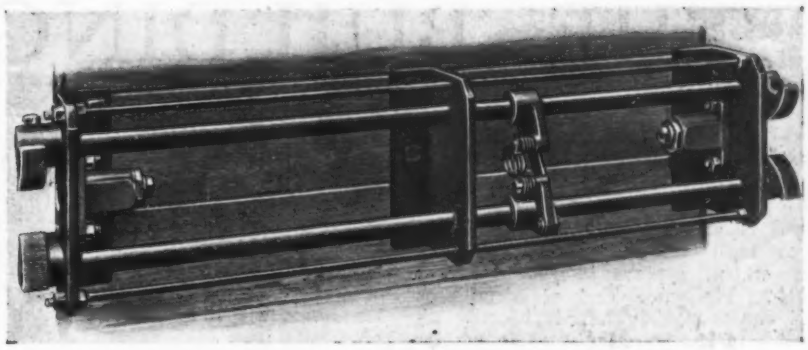


Fig. 11.—Instantaneous (Serrated Cam Type) Safety Gear, fitted below Car; for Round Steel Guide-rails.

Details of Tee Guide Rails.

| Lbs. per ft. run. | Width of base (ins.) | Height of web (ins.) | Width of web (ins.) | Remarks |
|---|---|---|---|---|
| 6½ | 2¾ | 1 5/16 | 3/16 | Counter-weight |
| 14 | 4½ | 3 7/16 | 11/16 | Car |
| 21 | 5 1/16 | 3 17/32 | 5/8 | |
| 39.4 | 6 | 5 3/16 | 1 | |

Guide rails, which are either cold rolled or planed steel, are usually supplied in 14 ft. to 16 ft. lengths. Alignment is secured by groove-and-tongue joints and a splice plate bolted at the back (Fig. 14). Splice plates for car guides are frequently specified to be not less than 12 in. long, four ⅝ in. bolts being required for each end of the guide. For counterweight guides, which are not called upon to stand heavy strains from the safety gear, 9 in. plates and ½ in. bolts are accepted. In cases where the supports on wall fixings are at a greater distance apart than 12 ft., angle iron or channel iron stiffeners are used, which run about 9 to 10 lb. per foot.

English practice has hitherto favoured the round mild-steel guide rails, but the majority of makers are now prepared to quote for tee-guide rails, as there is less risk of the car jumping the rails.

Round steel rails are usually listed in 18 ft. lengths, the standard sizes being 1½ in., 1¾ in., and 2 in., although 2¼ in. and 2½ in. are occasionally used for heavy duty lifts. One maker standardises 2 in. for car guides and 1½ in. for counterweights for all ordinary work.

The ends of the guide rails are usually of the spigot and socket screwed type, although some makers use a plain spigot and socket joint for the counterweight rails. The rails are held in position by cast iron palms or plates, which are screwed to them at intervals of 6 ft. (Fig. 15).

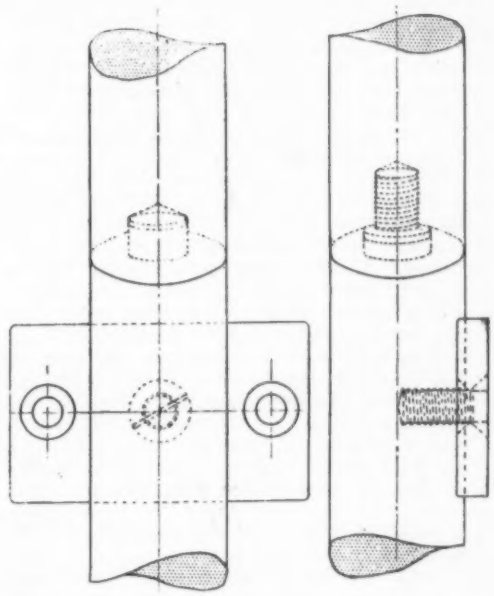


Fig. 15.—Details of Joint in Round-steel Guide-rails, showing Spigot and Socket, Plain and Screwed Joints, and Cast-iron Fixing Palm.

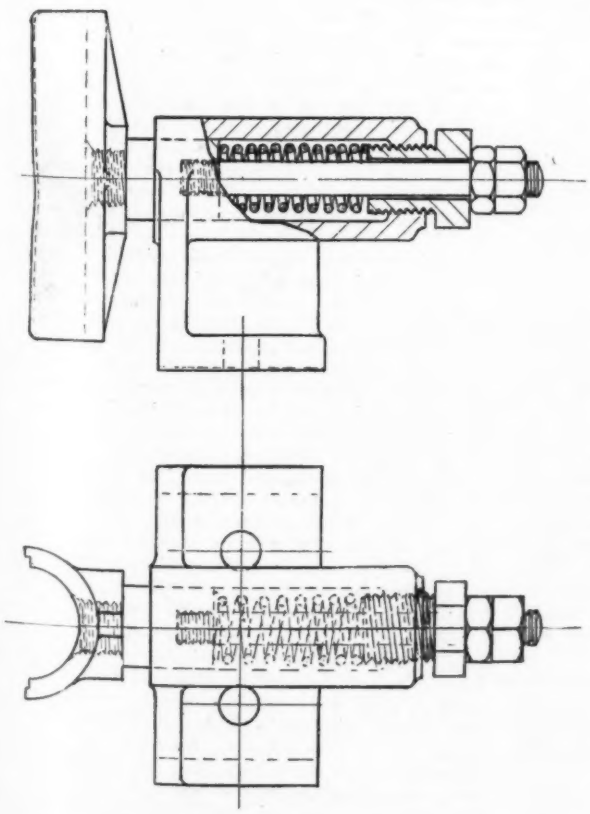


Fig. 13.—Spring-loaded Guide-rail Shoe for Round Steel Guide-rails.

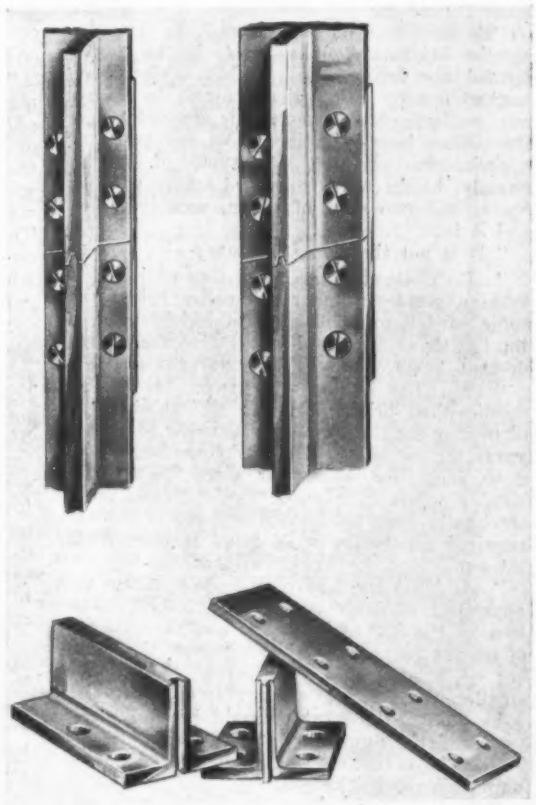


Fig. 14.—Details of Joints in Tee Steel Guide-rails, showing Tongued-and-grooved Ends and Splice Plates.

[The author desires to express his appreciation for the assistance rendered by Messrs. the Express Lift Co., Ltd., for Figs. 5, 8 and 14; to Messrs. Marryat & Scott, Ltd., for Figs. 1, 2, 3, 13 and 15; and to Messrs. Waygood-Otis, Ltd., for Figs. 4, 6, 7, 9, 10, 11 and 12.]

# THE BUILDING TRADE.

## ANALYSIS OF BUILDING COSTS.

We have received the following letter from Mr. B. Price Davies in reply to Mr. Sumner Smith's letter in our issue of the 24th ult.:—

"May I be allowed, as the author of the paper, to reply to Mr. Sumner Smith's criticism which appears in your issue of March 24? The same kind of friendliness which is emphasised by him is heartily reciprocated. It has been apparent to me for some time that it is Mr. Smith's inclination to pose as an authority on such a subject, and that my own humble views on quantity surveying, estimating, and costing are exceptionally wide of his; and that sooner or later such extremely divergent opinions would lead to a conflict of this friendly nature. In my paper, I attacked nobody, but I have now no alternative but to counter Mr. Smith's attack. Throughout my paper I emphasised the variable nature of building costs, and that individual analysis reveals the desirability of individual estimates.

"With all the fearlessness of a Whitehall gladiator, he discovers in my first two tables the possibility of housing scapegoats, and the workman and the builder arouse his suspicions. We will leave these two individuals to speak for themselves later, and meanwhile will venture to draw his attention to the fact that he has made a very ridiculous error as well as an incorrect assumption. Perhaps he will read the paper again. He will find no comparison between post-war and pre-war output, and that percentages are always based upon a total of one hundred. In dealing with the third table his grasp of it is also at fault, or does he now realise the folly of laying down hard and fast rules for percentages, irrespective of what a house contains, and the locality?

"The fourth table seems to have called for a special comment, and as this is a matter that practical builders are very familiar with, I will go over the same ground with an alternative explanation. Bricks are not of the same standard size though they are sold on a number basis, namely per 1,000. The two sizes I used for my comparison were 8¾ in. by 4¼ in. by 2¾ in., referred to as the smaller brick, and 9 in. by 4½ in. by 3 in., termed the larger brick. My tables were worked out by calculations, for it is almost impossible to obtain consistency otherwise, but they have been proved correct by practical experiments. I took two types of bricks, namely, bricks with frogs and bricks without frogs, and two sizes of joints, namely, ¼ in. and ½ in.

"It is not theorising to state:—

"(1) That with the same size of joint, it takes a greater number of smaller bricks per cubic yard than of larger-sized bricks—386 of the former as compared with 327 of the latter; or that 1,000 compares with 847 respectively.

"(2) That bricks with frogs take more mortar than bricks without; .257 cubic yards of mortar for the former as against .157 cubic yards for the latter, if with double frogs ⅝ in. deep each, for a similar sized brick, and similar joints in a cubic vard of brickwork. Or briefly that for one cubic yard of mortar required for bricks with frogs it only takes .61 cubic vard for bricks without.

"(3) That the size of the joint affects the quantities of both mortar and bricks. The smaller the size of joint, the less the quantity of mortar required, and the greater the number of bricks; and *vice versa*. Using the smaller sized brick without frogs and with ¼ in. joints, the mortar would be .157 cubic vard and the number of bricks 386, while for ½ in. joints, the mortar would be .263 cubic vard and the bricks 338.

"Getting away from the basic units into monetary values, I showed that while using the same basic rates and the same number of bricks laid per hour, the extremes of the examples resolved themselves into 40s. 2d. and 52s. 7d. per cubic yard. When I know that builders of a practical turn of mind insist that the bricks they purchase must be to a certain size, and that brick manufacturers, in order to meet their demands, have been obliged to alter their dies so as to eliminate the frogs, I still maintain that the analysis of a bulk item such as brickwork is worthy of investigation.

"The brick of one cubic foot in size and 28 lb. in weight is an absurditv of Mr. Smith's own creation, and reflects a scope of vision, which, if he found one type of tabulated sheet of service to a costing clerk, would immediately deluge the unfortunate victim with dozens of other types.

"The concluding tables were compiled in order to find out the approximate ultimate results of resolving the cost of a house into labour and profit respectively. The erection was first analysed, the labour being 30 per cent., but the remaining analyses varied considerably. On a 5 per cent. profit basis, my ultimate result was labour 87½ per cent., profit 12½ per cent. They were not suggested as being of use for either estimating or costing. It is quite consistent to refer to quantities in connection with estimating, and I believe that estimating and costing will develop on more progressive and practical lines when the new standard system is available. The setting up of the standard system aims at one of the most progressive steps in the history of the building trade.

"I previously referred to Mr. Smith's eagerness to fix the blame of the housing schemes on others. How easily this is done! We will assume that the workman and builder are also similarly inclined, and that Mr. Sumner Smith, as costing expert, has arranged the costing system of 'Blanktown,' and finds himself also involved. The names in the following narratives are entirely fictitious, and those who have had the experience of Government housing schemes will probably recognise some of the difficulties contended with, while my critic and would-be costing expert may find some of the references only too familiar.

"The Bricklayer's Narrative.—'About six months after being demobbed, in the spring of 1920, I started on the direct labour scheme of 30 houses erected by the Blanktown District Council. There was a manager in charge who also acted as general foreman, and he was assisted by a timekeeper and storekeeper. Their minds were not concentrated on pushing on with the work, for their one anxiety was what they called "costing." There were papers and cards galore.

"'The timekeeper would keep worrying us about how much time we were at various jobs, and the storekeeper would be for ever hovering around us, ferretting about the materials. I was never so humbugged in my life (and I have worked for dozens of builders), for we were half the time pottering—sheer pottering, in order to keep those confounded papers in order. If a plasterer went out on the roof to slate, the timekeeper would rush after him with another time-card and explain it, and by the time he was wise to it, it would come on to rain again, and who could blame the poor fellow if he went to the "Red Lion" out of the way. We were fed up to the back teeth, and I threw in my hand when the manager choked me off for removing some material from one block to another without going off first to tell the storekeeper. I was sent to the Town Hall to pick up my pay and insurance rds.

"'I went to a room with "Costing (Housing)" over the door and found two clerks pegging away for dear life amongst—more papers. The sheets on the job were nothing compared with these—long ones and short ones, draughtboard patterns, Ludo games, and Snakes and Ladders—and one of the clerks was Jimmy Nichol, whom I knew quite well before the war. He told me that he got the job after another fellow, who had taken it on without building experience, and eventually had to give it up, for the doctor told him to take a mental rest and not to look at such papers for about ten years. I knew his former employer did not keep more than two of them for his work, so I chaffed Jimmy that he must be getting an easy time. He said that the Council had been persuaded that this costing system would save money, but that there was really enough work for three, and that he used to come back nightly in order to try to keep the work under. I saw a sheet on the table headed "Fluid Materials," and when I asked him if they were cases of rum rations, he gave me my money and cards and told me to clear out and leave him to it. I subsequently started with a builder who said that he much preferred my filling in bricks to filling in papers.'

"The Builder's Narrative.—'We closed down and I joined up in 1915, and returned to civil life and to a dead business during the latter end of 1919. Materials and labour had gone up in an alarming manner and were still rising. To me there had been no intervening period of business between pre-war and post-war, and it took me some time to realise where prices were.

"'The Blanktown District Council invited the local body of builders to tender for the Government houses. The old hands had done no cottage-building since 1915, and having no post-war costs to go on, knew but little more than myself. The direct labour scheme was going on in a very unsatisfactory manner, though the manager was quite a good man. He was finding no end of bother with papers, and we suspected that we would be obliged to do the same. Materials were fearfully high, yet we were able to settle on basic prices, though we had but little promise of anything like sufficient supplies to push work ahead as we used to. Our most uncertain element was labour: almost daily we read of ca-canny and the whole business seemed so risky and speculative that several builders dropped off and said they preferred not to engage in it. However, two others and myself, who were out of work, decided to stick to it, and eventually one of them managed to get hold of an account of a quantity surveyor who had made recent records of such, and found that labour was 45 per cent. or practically half cost. Before the war we knew that 33⅓ per cent. was sufficient for this class of work, but this recent result coincided with what we had been told, and coming from a reputed costing expert, we priced our bills accordingly. Before sending in our prices, a sharp rise in wages occurred, and we worked out the increases on the same basis. The results of the direct labour scheme were used as a comparison, and we immediately learnt the blessings of elaborate costing. Did we make money? Well, we were paid for all increases for labour and materials, and were tremendously relieved to find that we were not obliged to keep records like the direct labour scheme. I do not suppose that we shall see a job like it again, and our heartfelt thanks are due to that expert who found that the labour on cottages was 45 per cent.'

"In the foregoing narratives, it will be found that neither the bricklayer nor the builder has any desire to blame himself—but neither does Mr. Sumner Smith. Perhaps Mr. Smith will again find my diction most expressive in that which it does not say, and reflection may teach him that his criticisms have again brought him to the same stage as his costing system and freak quantities, which is, aptly to use a phrase so familiar to himself, 'How not to do it.'"

# REDUCED OUTPUT.

WE have received the following letter from Mr. W. E. Garnett, of Ealing:—

Sir,—I agree with Mr. T. Snmner Smith in his remark that the parties he mentioned are those "chiefly concerned" in questions such as these. Obviously if there are some *chiefly* concerned, there must be others with a certain amount of interest.

To do what has been suggested, that is, "go to the actual execution of the work for his data," is good advice for obtaining practical experience, but in order to secure comparative data it is useless. The comparative work, in a general sense, has, up to the present, never existed for both pre-war and post-war times. It is because of this that tables were prepared of a hypothetical case, using what reliable data are available.

It did not seem necessary to point out that any alteration in the percentage of each trade to the total cost did not affect the result, but apparently it should be done. As an instance of this, we will assume the building is entirely covered by a flat concrete roof, and that the percentages are thereby altered to 7 for carpenter and 9½ for concretor. The figures would then be:—

Table "A."

| | Mechanic. £ s. d. | Labourer. £ s. d. | Materials. £ s. d. | | Mechanic. £ s. d. | Labourer. £ s. d. | Materials. £ s. d. |
|---|---|---|---|---|---|---|---|
| Concretor | 9 10 0 | — | 1 12 4 | 7 17 8 as against | 8 10 0 | — | 1 8 10 |
| Carpenter | 7 0 0 | 1 17 10 | 4 2 | 4 18 0 | 8 0 0 | 2 3 2 | 4 10 |
| | £16 10 0 | | | | 16 10 0 | | |

| | | | |
|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. |
| Concretor | 8 10 0 | — | 1 8 10 | 7 1 2 |
| Carpenter | 8 0 0 | 2 3 2 | 4 10 | 5 12 0 |
| | 16 10 0 | | | |

There is no alteration in the combined totals for the two trades and, of course, the same would be the case in the sum total for all trades, viz., £100. It was because of this, and so that no possibility of an unpractical basis was likely to arise, also to make as sure as possible that the figures agreed with actual practice and experience in typical cases for 1914 and 1920, that a fair average was obtained.

The essential point in Table "A"—the proportional value of £40 for labour and £60 for materials—has not been attacked. These figures, for this the typical style of building, have been found by experience to be approximately correct. So that while the details making up these totals are liable to criticism—these altering to some extent with each variation of the class of building described—the totals for combined labour and for materials given in Table "A" controvert the remark, "... then his whole structure is based upon an insecure foundation."

The paragraph relating to materials seems to have been misunderstood: what was done, and what it was intended to convey, will be again described. To make a complete comparison for 1914 and 1920, a list of materials for each trade was abstracted and computed from bills of quantities; again, for the same typical class of building, and priced at the current prices for materials for the respective dates. This gave the percentage rise (in each trade) of the materials required for the erection of the building. The remainder of the paragraph still holds good, with the additional note that the material columns of Tables "B" and "C" were obtained by using these percentages. I have omitted "properly-prepared" in this instance as the phrase appears to be disliked. The bills of quantities were already prepared by a firm of well-established quantity surveyors and can therefore be taken as correct and "properly-prepared." In using this phrase I meant to imply that they were not taken out by anyone who attempts to view buildings and building work from synthetical and analytical points (the former predominating) at the same time, or by anybody incompetent to do the work. Here, again, in non-essentials as well as in essentials, Mr. Sumner Smith has been beating the air.

A table based on cost (not contractor's cost) of post-war building could have been more easily obtained than Table "C," but this would have involved the consideration of factors which were avoided, viz., establishment charges and profit. It is fairly well known that on such a basis the cost of building would work out to fully three and a half times the pre-war cost. Had the £100 of cost been obtained from the contractor's books a comparative analysis would have been impossible owing to the different styles of construction prevailing in pre-war and post-war times. Housing has been the predominating factor since the war, and does Mr. Sumner Smith think that recently erected houses are analogous to those erected in pre-war times, *i.e.*, the 12 in. hollow walls with the 9 in. walls of the one-time speculative builder? Further, does he suggest that the books of any one contractor represent the building industry? The £100, allocated as shown, does represent this to a very large degree. We can, therefore, sweep aside a large number of his statements as having no bearing on the subject.

The tables were solely intended to show effect. The cause or causes—for their name is legion—have not been mentioned. The Report of the Departmental Committee on the High Cost of Building Working-Class Dwellings states a number of them, and to these we can add yet another, viz., industrial fatigue—but this one is a subject for students of economics. Whatever the causes, blame cannot be ascribed solely to labour. Many reasons which have been published in *The Builder* indicate this. The tables clearly refute wild charges that have been made in respect of this subject, for the most, on the average, that can be made is the fraction of one-third, and there is more than one cause for this. Surely to state the effect or to show the bad consequences does not make the "task" of any council "more difficult." It is well to remember that the figures quoted were not intended to, and cannot, be taken arbitrarily, and it is hoped that thoughts suggested by scanning all the notes will lead to a better appreciation of all points by all parties concerned.

One can well imagine the complacent attitude of Mr. Sumner Smith when, being the client or building owner, he is obliged to cut down a part of his building scheme because it is found that he would have been paying as much, or nearly so, for space as he would have paid, before the war, for a complete building!

Quite apart from all that has been said, a further study and application of the tables along certain lines will bring us into the realm of applied economics. It has been stated at various times that labour is primarily responsible for 80 per cent. to 90 per cent. of the total cost. Commencing with the raw material as found in the earth, in tabulating figures so far available it would show somewhat as follows:—

| | Labour. | Per cent. | Material. |
|---|---|---|---|
| Earliest stage ... ... ... ... ... | 80 to 90 | | The Earth = land, royalties, etc. |
| Material which is the finished article of the manufacturer and the raw material of the building contractor ... ... ... | 50 | | 50 |
| Completed building—variously stated as | 40 | | 60 |
| | 33⅓ | | 66⅔ |

It is clear that as soon as labour (manual and non-manual), when genuinely employed, ceases to increase the proportional value of material, it is defeating its own object, and so soon as this position is being approached warnings of the impending defeat are not lacking. This, and subsequent remarks, of course, will apply both to the building industry and to the allied trades at the same time. Eliminating all allowances that have been made in Table "C," the totals would show approximately as follow:—

| Labour. | Materials. |
|---|---|
| £105 (44 per cent.) | £133 (56 per cent.) |

showing that if there had not been such a restriction in output there would not have been such a considerable backward movement.

# BUILDING SURVEYORS' AND INSPECTORS' ASSOCIATION.

A SPECIAL general meeting of this Association was held in the Town Hall, Manchester, on Saturday last.

Consideration was given to the proposed N.A.L.G.O. scheme of superannuation, which it is hoped to bring before the House of Commons at an early date. The scheme generally was well received, but it was felt the ideal would be to have a compulsory rather than a permissive measure. In the event of the scheme not being successful, it was suggested that the authorities be urged to adopt a consolidated scheme of superannuation for all Local Government and Civil Servants.

The final report on the scale of salaries was unanimously accepted, and it is hoped that this will be issued immediately after the annual conference.

The Chairman reported with regard to his efforts in connection with the formation of area branches, with particular reference to the London area, and it is hoped that this will mature at an early date. The London and Southern members appear to be energetic in the direction of forming the Association into a Building Surveyors' Institute. This matter was referred to the Executive, and will no doubt be further discussed at the annual conference, the provisional date for which is June 17. At this conference, proposed to be held at Birmingham, it is hoped to have a paper by Mr. R. E. Stradling, B.Sc., of the Civil Engineering Department of the Birmingham University. The paper will be given in the morning, and the business conference will take place in the afternoon.

### New Timber—Seasoning Process.

According to the *Journée Industrielle*, Monsieur Otto, Professor at the Sorbonne, has invented a process for seasoning timber by the use of ozone. The process is said to give the same result in about 20 days as would naturally be obtained in the course of several years. The wood is subjected to the action of a current of air containing a certain percentage of ozone. A micrographic examination made by the laboratory of the Conservatoire des Arts et Métiers is reported to show that samples of oak and walnut which had been treated by the Otto process show the same characteristics as seasoned wood. The treatment does not change the colour of the wood. The Otto process is being worked by a French company, which has constructed works at Seregno, near Milan, and will shortly build new works in the neighbourhood of Paris.

### The New Waterloo Station.

In our last issue we stated that 156,000 superficial feet of glazing had been erected in the roof of the new Waterloo Station by Messrs. W. Edgcumbe Rendle & Co., Ltd.; the correct area is 560,000 superficial feet.

# NATIONAL FEDERATION OF HOUSE BUILDERS.

## ANNUAL MEETING AT NOTTINGHAM.

### Civic Welcome.

THE annual meeting of the National Federation of House Builders was held in the Exchange Hall, Nottingham, on Thursday and Friday last week. Prior to the commencement of the business on Thursday, a civic welcome was extended to the members, who were present in large numbers.

The MAYOR, COUNCILLOR F. BERRYMAN, welcomed the Federation.

MR. H. M. GRANT, of Birmingham, who responded, said the Federation represented the people who, prior to the passing of the Finance Act, built 97 per cent. of the houses that were erected in the country, and they also found from £25,000,000 to £30,000,000 of money to put into housing. They were very anxious to get back to private enterprise. If private enterprise were treated properly and on an economic basis they could house the whole country again. Unless they got back to private enterprise—and he thought they were going to do so—the nation would not be so successful in housing schemes as in 1911 and 1912. The great curse to-day was the letting of rooms, and he thought it a great shame that a man who had been out fighting for his country could not get a house. To-day rooms were often let for which the tenants of the houses charged more than the charge made by the landlord for the rent of the whole house. The builder had been blamed for many things, but if the Government had not taken the building of houses into its own hands it would not have lost the millions of money it had done. It would not be until they were back to private enterprise that the housing problem would be solved.

MR. G. A. PERKS, of Nottingham, referred to the Rent Restrictions Act, and said that it had been the cause of land having been rendered useless. The land which they held to-day could not be used until they could, in some measure, have a return to economic values. Until they could return to an economic rent, and the Rent Restrictions Act was removed, they could not expect men to go on building for the sake of building. He hoped that in the near future a new scheme would be developed, so that they would be able to get out of the unfortunate position they were in to-day.

### Annual Report.

The SECRETARY (Mr. N. McKellen) read the annual report, which stated that the Committee was convinced that no progress could be made by private enterprise until a definite national programme was adopted, and that while uncertainty existed as to what policy would be pursued in the future, members could not commence any substantial schemes. When the intention of the Government as to future State assistance for house builders was known, the house builder could lay his plans, and if the nature of the assistance permitted of private schemes in competition with the public ones he could commence to build. The Committee protested against the misleading figures as to reductions in cost, which were given so much publicity in the Press. The only effect was to raise hopes of cheap housing in the minds of the public which stood but a remote chance of being fulfilled. The provision of capital for the purchaser had been repeatedly before the Committee, and recommendations for the development of the Small Dwellings Acquisition Act had been made to the local authorities and to the Ministry of Health. The development of building societies would form an important part of the work of the Federation during the coming year.

On the motion of the CHAIRMAN, the report was adopted, as was also the financial statement and report.

### New Officers.

Mr. J. Squires, Nottingham, was elected President; Mr. H. R. Selley, London, and Mr. G. F. Darbyshire, Manchester, vice-presidents; and Mr. G. H. Brown, Manchester, treasurer. The following were elected on the Committee:—Messrs. T. H. Halsall, G. F. Brown, and W. G. West, of Manchester; Messrs. G. A. Perks, C. Ward, and A. B. Litchfield, of Nottingham; Messrs. A. H. Williams, A. S. Franklin, and C. H. Swain, of London; Messrs. J. Hughes and J. B. Hutchins, of Liverpool; Messrs. A. J. Belton and W. J. Patchett, of Sheffield; Messrs. C. Hougham, H. Morris, and W. J. Phillips, of Birmingham; Mr. R. J. Patchett, of Bradford; Mr. H. Johnson, of Hull; and Mr. J. Coates, of Leeds.

### President's Address.

The newly-elected PRESIDENT, after returning thanks for the honour conferred upon him, said the last ten years had undoubtedly been the worst the house-building industry had ever experienced. They had been years, not only when it had been impossible for the house builder to carry on his business, but latterly when capable men of great specialised experience had had either to take up other work or stand idly by and watch the foolish and disastrous attempts by the Government, which had changed the whole course of the trade and forced it into an impossible position. Practical proposals had been laid before the Ministry of Health which would have helped to restore something like order into the trade and helped them to get on with their business, but, unfortunately for the country, most of the proposals were turned down. Practical house builders had watched the race to bankruptcy of the housing departments of the Government and local authorities, knowing full well what it must lead to, and how it was making the revival of the legitimate house builder's business more and more difficult. The future was, in his opinion, brighter than it had been at any time during the history of the Federation. The country had awakened to the awful waste caused by a policy largely dictated by idealists and dreamers, who thought it possible at once to create a new earth on garden city lines, where all the poor and the workers could live under conditions such as they had never lived under before. Those ideals were excellent, but not at present practicable, except to a limited extent. It could be safely asserted that the reputable house builder had, in the past, provided houses which were the last word in value for money. Admittedly many of those were not the best houses that could be built, but they certainly were the best that could be built for the rent which tenants were prepared to pay. With reference to the houses built by municipalities all over the country at enormous cost, a great portion of them were good, but there were others to which the term "brick box with a slate lid" would suitably apply. Had house builders been able to obtain better rents in the past there was no question that the people would have had better houses. It would be interesting to know how much rent was owing on municipal houses up to date. In some published instances it was almost incredible. The Government largely ignored the question of cost, and, urged on by certain social reformers and garden city enthusiasts, consulted the Joint Industrial Council for the Building Trade as to the carrying out of the architects' plans. According to the Geddes report, on October 1 there had been completed 68,550 houses, since increased to 85,155; 68,730 were in course of erection—all at an average cost per house of £1,100. The annual loss on each house was estimated at £59 (*i.e.*, more than 22s. 6d. per week) for the tax- and ratepayer to find. That did not include anything for the amount spent by the Government and local authorities on their housing departments, and other incidental expenses. The houses were stated to be let at an average rent of £16, which gave them a capital value of considerably less than £300 each. Private enterprise applied for, and had been granted, no fewer than 42,010 Certificates "A" for houses to be built under the subsidy scheme. A year ago the amount of the subsidy was not enough to admit of their building houses to let to tenants, but with, say, an additional £100 it would unquestionably have brought thousands of additional houses. In respect of the 42,010 houses which were being built under the scheme, the allowance worked out at an average of £244 per house. What a striking difference between that sum and the estimated loss of £800 per house, plus the cost of housing staffs. That was the direct result of the policy which the Government had pursued for fully three years. It appeared to have tried to cold-shoulder the house builder out of business, with the result that, with all the colossal waste, the shortage of houses was estimated by many as greater now than it had ever been before. When unnecessary and deplorable waste had been stopped, and when the confidence of occupiers or investors had returned to enable them to sell the houses, the organised house builders could build better houses than local authorities or the Government, and be able to let them at economic rents without loss to the ratepayers and taxpayers of the country.

### The Dinner.

The Nottingham Association entertained the delegates to dinner at the Welbeck Hotel on Thursday evening. Mr. George Sadler (President of the Nottingham Association) occupied the chair.

MR. ATKEY, M.P., proposed "The National Federation of House Builders."

MR. J. SQUIRES, in responding, said that when the war was in progress private enterprise was given the cold shoulder. They came to the conclusion, however, that they were not going to be treated in that manner, and they were still fighting for private enterprise to-day. If the Finance Act had not been passed housing would have been all right. Houses were needed badly to-day, and there ought to be more being built. It was a disgrace that two and three families should have to live in one house. The time had arrived when some means should be devised in order to get houses up. Private enterprise could not build houses to-day as they did in 1914 and years gone by. He would suggest that municipalities should allow builders to go on to the land which had been laid out for housing schemes and allowed to build houses and do what they like with them—either sell them or let them. Municipalities could say how the houses were to be built, but that was all.

MR. H. M. GRANT, who also associated himself with the toast, declared that the old speculative builder, who, prior to the passing of the Finance Act, built 90 per cent. of the houses, was prepared to do it again if only he were properly assisted. To-day the house-building trade was hampered by the authorities, who put on to the house builder every expense they possibly could. Private enterprise could and would solve the housing problem in two or three years' time, if properly assisted. Why should not the money, if put into the house-building trade, get a proper return like it did in every other trade? The

banks were bursting with money to-day, and he thought some of it ought to be put into housing, for it was the duty of the country to see that ex-Service men should be properly housed.

"Our City and Commerce" was proposed by Mr. H. R. Selley, and responded to by Ald. Sir Bernard Wright.

Mr. C. H. Oldham submitted "The Nottingham and District Association of House Builders."

Mr. A. Waddington responded.

Mr. T. Harper toasted "The Guests," to which Councillor W. Crane and Major D. Wood responded.

### Friday's Proceedings.

The business session took place at the Exchange Hall on Friday morning.

Mr. J. Squires, the President, gave an address on "The Federation and the Future of the House Building Industry." He said that some doubts were expressed in high quarters as to the present shortage of houses, but if 300,000 were erected there would not be one too many. The increase in the population of England and Wales between 1911 and 1921 was 1,814,750, which, at the rate of four people to a house, meant that 453,687 more houses were needed. From 1911 to the outbreak of the war only 48,393 houses were built in the forty large municipal areas. As the number of houses erected in those areas was usually about one-third of the total built in the country, probably approximately a total of 150,000 houses were built from 1911 to 1914. From the Armistice to the Census last year about 50,000 houses were erected by the Government, making a grand total of 200,000 in ten years. Estimating the number of houses falling out of use in that time at 50,000, the net increase was 150,000, as compared with 453,000 required, which represented a deficit of 300,000. Until there was a declaration of policy by the Government the whole housing problem would continue to grow.

The following resolution was moved by Mr. Squires:—"That the present uncertainty as to the intention of the Government with regard to housing is preventing a revival of building by the house builder, and that this Federation urges the Government to formulate a definite policy with due consideration of the importance of private enterprise, in order that house builders who are waiting to resume their business may be in a position to gauge the possibility of building on an economic basis."

Mr. G. F. Darbyshire (Manchester) seconded, and the resolution was carried, as was also a resolution proposed by Mr. A. Waddington, of Sheffield, to the effect that "the provision of houses for sale to occupiers forms the most important branch of the house-building industry."

Mr. A. Robinson (Grimsby) moved a resolution asking that the Government should give special attention to financing the purchasers of single houses, and urging that local authorities should be authorised to advance capital on mortgage, building and kindred societies also being encouraged to assist.

Mr. Selley moved a further resolution to the effect that local authorities should only build working-class houses where the demand was imperative, and, further, that as houses could be built by house builders on local authorities' land at prices which would enable them to be let at an economic rent on the building cost, no further loss need be incurred by the public in respect of the housing of the working classes. Mr. N. McKellen seconded the resolution, which was carried.

Another resolution requesting the Government to withdraw the Rent Restrictions Act was moved by Mr. W. Boardley (Manchester), who said that the Act was paralysing the house-building industry.

The resolution was adopted.

# RATES OF WAGES IN THE BUILDING TRADE.

**The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—**

| | Masons | Bricklayers. | Carpenters, Joiners. | Plasterers | Slaters. | Plumbers. | Painters. | Masons' Labourers. | Bricklayers' Labourers. | Plasterers' Labourers. |
|---|---|---|---|---|---|---|---|---|---|---|
| Aberdare | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Accrington | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Altrincham | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Ashton-under-Lyne | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Barnsley | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Barrow-in-Furness | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Barry | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Bath | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | | | 1/2½ |
| Bedford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Birkenhead | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | | | 1/9½ |
| Birmingham | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/11 | 1/10 | | | 1/5 |
| Bishop Auckland | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Blackburn | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Blackpool | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Bolton | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Bournemouth | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Bradford | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Bridgwater | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | | | 1/0½ |
| Brighton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Bristol | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Burnley | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Burton-on-Trent | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Bury | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Cambridge | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Cardiff | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Chatham | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Chelmsford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/[illegible] |
| Cheltenham | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | | | 1/[illegible] |
| Chester | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Chesterfield | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Colchester | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Coventry | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Crewe | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Darlington | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Derby | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Doncaster | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Dudley | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/[illegible] |
| Durham | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| East Glam. and Mon. Valleys | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Exeter | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/5 | | | 1/1½ |
| Folkestone | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Gloucester | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/6 | | | 1/2½ |
| Grantham | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Grays | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10½ | 1/9 | | | 1/5 |
| Grimsby | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Great Yarmouth | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Guildford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Halifax | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Harrogate | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Hartlepools | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Hastings | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Hereford | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/6 | | | 1/2½ |
| Huddersfield | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Hull | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Ipswich | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Lancaster | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Leamington Spa | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Leeds | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10½ | 1/10 | | | 1/5 |
| Leicester | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Lichfield | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Lincoln | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Liverpool | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | 2/2 | | | 1/9½ |
| Llanelly | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| London | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10½ | 1/9 | | | 1/5 |
| Loughborough | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Luton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Maidstone | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Manchester | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Mansfield | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Merthyr Tydfil | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Middlesbrough | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Newcastle-on-Tyne | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Newport, Mon. | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Northampton | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Norwich | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Nottingham | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Oakham | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | | | 1/2½ |
| Oldham | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Oxford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Plymouth | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/7 | | | 1/3½ |
| Pontypridd | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Portsmouth | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Preston | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Reading | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Rochdale | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Rochester | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | | | 1/1 |
| Rugby | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| St. Albans | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| St. Helen's | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Scarborough | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Sheffield | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/0 | 1/10 | | | 1/5 |
| Shrewsbury | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/[illegible] |
| Southampton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Southend-on-Sea | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Southport | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| South Shields | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Stockport | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Stockton-on-Tees | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Stoke-on-Trent | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/11 | 1/10 | | | 1/5 |
| Stroud | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/5½ | | | 1/1½ |
| Sunderland | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Swansea | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Swindon | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/6 | | | 1/2½ |
| Taunton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Torquay | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Tunbridge Wells | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Wakefield | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Walsall | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| Warrington | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| West Bromwich | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Wigan | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Windsor | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | | | 1/1½ |
| Wolverhampton | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | | | 1/5 |
| Worcester | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |
| York | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | 1/8½ | | | 1/3½ |

(For rates of wages in the Building Trade in Scotland, see page 538.)

# CONTRACTS, COMPETITIONS, &c.

**For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.**

***The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.***

## BUILDING AND PAINTING.

APRIL 8.—**Drighlington.**—ALTERATIONS.—Alterations to the No. 3 Branch Stores for the Drighlington Co-operative Industrial Society, Ltd. Mr. Charles A. Hall, architect, Whitehall-road, Drighlington.

APRIL 8.—**Edinburgh.**—VARIOUS WORKS.—For various works in connection with the maintenance of city property, for the T.C. Architect's Department, City Chambers, Edinburgh.

APRIL 8.—**Leeds.**—PAINTING.—For painting and cleaning at the Infectious Diseases Hospital, Seacroft Killingbeck Farm, and the Tuberculosis Sanatorium, Killingbeck, for the T.C. Steward's Office, Seacroft Hospital.

APRIL 8.—**Penge.**—HOUSES.—Erection of 22 (A) type and 28 (B3) type houses at the Chesham Park Housing Site, for the U.D.C. Lieut.-Col. H. W. Longdin, Architect, Town Hall, Penge. Deposit £3 3s.

APRIL 10.—**Brierley Hill.**—HOUSES.—Erection of 25 houses, for the U.D.C. Mr. H. E. Farmer, Architect, 32, Paradise-street, Birmingham.

APRIL 10.—**Buxton.**—PAINTING.—For the outside painting of the Ashwood Park Hotel, for the T.C. Borough Surveyor, Town Hall, Buxton.

APRIL 10.—**Conisborough.**—CONVENIENCES.—Erection of public conveniences at Denaby Main, for the U.D.C. Mr. H. Thirlwall, Surveyor, Church-street, Conisborough. Deposit £2 2s.

APRIL 10.—**Ipswich.**—ALTERATIONS.—For alterations and additions to Burlington Church and Infant Schoolrooms, London-road, for the Committee. Mr. C. Borrett, 1, London-road, Ipswich.

APRIL 10.—**London.**—PAINTS.—For the supply of 12 tons 4½ cwt. of paints, for the Burma Railways Co., Ltd. Mr. F. C. Franks, Secretary, 199, Gresham House, Old Broad-street, London, E.C.2. Charge 10s.

APRIL 10.—**Newcastle-on-Tyne.**—ALTERATIONS.—Alterations to Elswick Hall, Elswick Park, for the T.C. City Engineer's Office, Town Hall, Newcastle-on-Tyne.

APRIL 11.—**Kent.**—PAINTING.—For outside painting at Chatham, Sittingbourne and Wren's Cross Police Stations, for the C.C. County Architect, 86, Week-street, Maidstone.

APRIL 11.—**Longford.**—COTTAGES.—Erection of 12 cottages at Longford. Mr. J. J. Healy, Secretary, Office of Public Works, Dublin.

APRIL 11.—**Royston.**—HOUSES.—For the erection of a pair each of Class "A" and Class "B" houses in Station-road, for the U.D.C. Messrs. Dyson, Cawthorne & Coles, 10, Regent-street, Barnsley. Deposit £1 1s.

APRIL 11.—**St. Albans.**—PUBLIC CONVENIENCES.—Construction of underground public conveniences in front of the Town Hall, St. Albans. City Engineer and Surveyor, 96, Victoria-street, St. Albans.

APRIL 11.—**Stourbridge.**—HOUSES.—Erection of A and B type houses on the "Grange Estate Housing Scheme," exactly of the types that have been, or are being erected for the Borough Council of Stourbridge. Mr. Fredk. Woodward, Housing Director, Borough of Stourbridge, Market-street, Stourbridge.

APRIL 11.—**Wandsworth.**—PAINTING.—For internal painting at St. John's Hospital, St. John's Hill, Wandsworth, S.W., for the Board of Guardians. Mr. F. J. Curtis, Clerk, St. John's-hill, Wandsworth, S.W. 18. Deposit £2.

APRIL 12.—**Braintree.**—WALLS.—For rebuilding retaining walls adjoining Clap Bridge, Braintree, for the Essex C.C. Mr P. J. Sheldon, County Surveyor, Chelmsford.

✱APRIL 12.—**Coventry.**—CHURCH.—Erection of proposed new Wesleyan church at Earlsdon, Coventry, with a seating accommodation of 575. Messrs. Crouch, Butler & Savage, F.R.I.B.A., architects, 67A, New-street, Birmingham. Deposit £2 2s.

APRIL 12.—**Earlsdon.**—CHURCH.—Erection of Wesleyan Church at Earlsdon, Coventry. Messrs. Crouch, Butler & Savage, architects, 67A, New-street, Birmingham. Deposit £2 2s.

APRIL 12.—**St. Fagan's.**—VARIOUS WORKS.—Erection of a house for an hydraulic ram, cutting trenches, &c., for the water supply of small holdings at Drope, Michaelston (about 1 mile from St. Fagan's), for the Glamorgan Agricultural Committee. The Director of Agriculture, 30, Park-place, Cardiff.

APRIL 12.—**Twickenham.**—ALTERATIONS.—Alterations at Hedingham House, Hampton-road, for the U.D.C. Mr. F. W. Pearce, Surveyor, Town Hall, Twickenham.

APRIL 12.—**Wandsworth.**—FENCING.—Providing and fixing oak pale fencing (approximate length 219 ft.) at St. James' Hospital, Ouseley-road, Balham, for the Wandsworth Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.18.

APRIL 15.—**Ashington.**—PREMISES.—Erection of new branch premises at Seaton Hirst, Ashington, for the Ashington Industrial Co-operative Society, Ltd. Messrs' Harrison, Ash & Blythe, architects, 22, Ellison-place, Newcastle-on-Tyne.

APRIL 15.—**Carlisle.**—HOUSE.—For erecting a dwelling house in Warwick-road. Mr. Robert Batey, 39, Warwick-road.

APRIL 15.—**Glasgow.**—JOBBING WORKS.—For jobbing building works for one year, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

APRIL 15.—**Pontypool.**—VESTRY.—Erection of new vestry and laying of chancel floor at St. James's Church. The Vicarage, Clarence-street, Pontypool.

APRIL 16.—**Wrockwardine.**—RENOVATION.—Renovation of Primitive Methodist Church, Wrockwardine Wood. The Manse, Wrockwardine, Salop.

APRIL 18.—**Falmouth.**—PAINTING.—For external painting of All Saints' Church. Churchwardens.

APRIL 18.—**Molesey.**—BATHING STATION.—For the erection of a bathing station on the River Thames near Molesey Lock, for the U.D.C. Surveyor, Council Offices, East Molesey.

APRIL 19.—**Bournemouth.**—COTTAGES, &C.—Erection of eight pairs of cottages, piggeries, &c., at Muccleshell. Mr. A. L. Roberts, County Architect, The Castle, Winchester. Deposit £1 1s.

✱APRIL 19.—**Bradford.**—SHOP FITTING.—Shop fitting and shop fronts, including all incidental builders' work in connection therewith, for the Electricity Committee of the City of Bradford, at Sunbridge-road. City Architect, Town Hall, Bradford.

APRIL 19.—**Sowerby Bridge.**—BUILDING.—Erection of a new Post Office at Sowerby Bridge, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s.

APRIL 19.—**Truro.**—LOCK GATES.—Construction of lock gates for flushing purposes, concrete piers, and other work, at Boscawen Bridge, for the T.C. Mr. F. A. Barnes, City Engineer, Municipal Buildings, Truro.

APRIL 19.—**Wolverhampton.**—ALTERATIONS.—For alterations and additions to the Town Hall, for the T.C. Mr. G. Green, Engineer, Town Hall, Wolverhampton. Deposit £2 2s.

APRIL 21.—**West Hartlepool.**—HALL.—Erection of a Church hall, Belle Vue, West Hartlepool, for the Belle Vue Congregational Church. Mr. C. F. Burton, F.S.A., George-street, West Hartlepool. Deposit £1 1s.

✱APRIL 26.—**London, N.**—CLEANING, PAINTING, REPAIRING.—Cleaning, painting and repairing work at the Northern Fever Hospital, Winchmore Hill, N.21, for the Metropolitan Asylums Board. Office of the Board, Embankment. E.C.4. Deposit £1.

✱APRIL 27.—**Leamington.**—REINFORCED CONCRETE.—Construction of reinforced concrete bridge over the River Leam, for the B.C. Mr. J. J. Kennan, Borough Engineer, Town Hall, Leamington Spa. Deposit £5.

✱APRIL 27.—**Penarth.**—ALTERATIONS AND ADDITIONS.—Alterations and additions at the Post Office, Penarth, for H.M. Office of Works. King Charles-street, London, S.W.1. Deposit £1 1s.

MAY 1.—**Carmarthen.**—PAINTING.—For painting and colouring at various schools, for the C.C. Mr. W. Vincent Morgan, County Architect, County Offices, Carmarthen.

NO DATE.—**Cardiff.**—HOUSES.—Construction of roads and sewers and the building of 20 officials' houses, for the Powell Duffryn Steam Coal Co. Messrs. Kenshole & Bevan, 30, Charles-street, Cardiff, or to Messrs. Wm. Evans & Sons, The Court, Pencoed, joint architects.

NO DATE.—**Carlisle.**—PAINTING.—For the outside painting at the Grammar School, for the Governors. Mr. H. E. Ayres, architect, Carlisle.

NO DATE.—**Dalston.**—PAINTING.—For painting the chapel and schoolroom for the Trustees of the United Methodist Church. T. Oldfield, Secretary, Low Flanders, Dalston.

NO DATE.—**Leitrim.**—CHAPEL.—Erection of New chapel and additions to the Convent of Mercy, Mohill, Co. Leitrim. Mr. Thomas F. McNamara, architect, 192, Great Brunswick-street, Dublin. Deposit £2 2s.

NO DATE.—**Merthyr Tydfil.**—COTTAGE.—For the erection of a gardener's cottage at Penybryn, Cefn Coed, for Mr. F. S. Simons. Messrs. Johnson & Richards, architects, Merthyr Tydfil.

NO DATE.—**Merthyr Tydfil.**—MEMORIAL HALL.—For the erection of the Kirkhouse Memorial Hall, Dynevor-street, together with alterations to schoolroom. Messrs Johnson & Richards, architects, Merthyr Tydfil. Deposit £5 5s.

NO DATE.—**Walthamstow.**—HOUSES.—Erection of pair of semi-detached houses at Highams Park. Mr. A. E. Smith, architect, Thorpe, Norwich.

## FURNITURE, MATERIALS, etc.

APRIL 8.—**Glasgow.**—MATERIALS.—Stores for the Gas Department of the T.C. General Manager, Gas Department, 45, John-street, Glasgow.

APRIL 8.—**Oakham.**—MATERIALS.—Road materials for the Rutland County Council. Mr. B. A. Adam, Clerk, Oakham.

APRIL 10.—**Melton Mowbray.**—ROAD MATERIALS.—Supply of broken granite and slag, to the R.D.C. Mr. Arthur H. Marsh, Clerk, Melton Mowbray.

APRIL 10.—**Penarth.**—ROAD MATERIAL.—For the supply of limestone and gravel, for the U.D.C. Mr. E. Evans, Surveyor, Offices, Penarth.

APRIL 10.—**Runcorn.**—MATERIALS.—Supply of road and other materials to the R.D.C. Mr. G. F. Ashton, Clerk, 71, High-street, Runcorn.

APRIL 11.—**Edinburgh.**—STORES.—For the supply of general stores for Gas Department. for the T.C. Mr. H. H. Gracie, engineers, 15, Carlton-hill, Edinburgh.

APRIL 11.—**Gellygaer.**—MATERIALS.—Supply of road and other materials, to the U.D.C. Mr. F. Read, Surveyor, Council Offices, Hengoed, Glamorgan.

APRIL 11.—**London.**—PAINTS.—For the supply of paints, &c., for the Madras and Southern Mahratta Railway Co., Ltd. Offices, 25, Buckingham Palace-road, Westminster, S.W.1. Charge £1 1s.

APRIL 12.—**Littlehampton.**—TAR.—Supply of about 23,000 gallons of distilled tar, to the U.D.C. Mr. L. G. Dashper, Town Offices, Littlehampton.

APRIL 13.—**Greenwich.**—PAVING.—Supply of 3,000 ft. super. of York stone paving, to the B.C. Borough Engineer, Town Hall, Greenwich, S.E. 10.

# BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

| | Masons. | Bricklayers. | Carpenters, Joiners. | Plasterers. | Slaters. | Plumbers. | Painters. | Masons' Bricklayers' Labourers. | Plasterers' |
|---|---|---|---|---|---|---|---|---|---|
| Aberdeen | 1/10½ | 1/10½ | 1/9 | 1/9 | 1/9 | 1/9 | 1/7 | 1/5½ to 1/6½ | |
| Airdrie | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Alexandria | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Arbroath | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/5½ | |
| Ayr | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 1/9 | 1/5½ to 1/6½ | |
| Bathgate | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 1/9 | 1/5½ to 1/6½ | |
| †Blairgowrie | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | — | — | |
| Bo'ness | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/- | 1/8 | |
| Coatbridge | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Dumbarton | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/9 | 1/5 | |
| Dumfries | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/11½ | 1/8 | 1/2½ 1/2½ 1/3½ | |
| Dundee | 2,0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 1/9 | 1/7 | |
| Dunfermline | 2/0½ | 2/0½ | 2/0 | 2/0 | 2/0½ | 2/0½ | — | 1/7½ | |
| Duns | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/0 | |
| Edinburgh | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Falkirk | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Fort William | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/2½ | |
| Galashiels | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | 1/11½ | — | — | |
| Glasgow | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/1 | 1/7½ | |
| Greenock | 2/0½ | 2/0½ | 2/0 | 2/0 | 2/0½ | 2/0 | 1/9 | 1/4½ to 1/7½ | |
| Hamilton | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 1/9 | 1/7½ | |
| Hawick | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/10½ | 1/8 | 1/3½ | |
| Helensburgh | 2/0½ | 2/0½ | 2/0 | 2/0½ | 2/0½ | 2/0 | 1/9 | 1/7½ | |
| ‡Inverness | 1/11½ | — | ‡ | 1/7 | 1/6½ | 1/9 | 1/6 | 1/0 to 1/3 | |
| Kilmarnock | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/1 | 1/7 | |
| Kirkcaldy | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/6½ | |
| Kirkwall | 1/9 | 1/9 | 1/9 | 1/9 | 1/9 | 1/9 | — | 1/2 | |
| Lanark | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7 | |
| Motherwell | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |
| Perth | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/10 | 1/9 | 1/4 | |
| Stirling | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 1/9 | 1/7 | |
| Stirlingshire (Eastern District) | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 1/9 | 1/7 | |
| Wishaw | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | 2/0½ | — | 1/7½ | |

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 537. † For housing work only; for other work, Masons 1/8, Painters 1/7, Labourers 1/- to 1/4. ‡ Masons and Carpenters on strike.

April 14.—**Daventry.**—Wagon.—Supply of a 5 to 6 tons end-tipping steam wagon to the R.D.C., to be lined with sheet steel. Mr. W. W. Band, Surveyor, Newnham, Daventry.

April 14.—**Lymm.**—Motor Lorry.—For the supply of a light motor lorry with tipping body, for the U.D.C. Surveyor, Council Offices, Lymm.

April 15.—**Ely.**—Materials.—Supply of 3,650 tons of granite and 920 tons of gravel. Mr. F. W. Firby, surveyor, Granby-street, Littleport, Isle of Ely.

April 15. — **Fareham.** — Materials. — Supply of granite, basalt or other hard stone, for the R.D.C. Mr. J. F. Whitear, surveyor, 16, Southampton-road, Fareham.

April 15.—**Glasgow.**—Materials.—For the supply of materials to Statute Labour Department. Office of Public Works, 64, Cochrane-street, Glasgow.

April 17.—**Ilkley.**—Materials.—Supply of broken granite, broken limestone, tarred slag and tarred limestone and distilled tar, for the U.D.C. Mr. J. M. Gameson, Surveyor, Town Hall, Ilkley.

April 17.—**Tenterden.**—Road Materials.—For supply of road and other materials, for the T.C. Mr. W. L. C. Turner, Surveyor, Town Hall, Tenterden.

April 18.—**Maldon.**—Road Materials.—Supply to the R.D.C. of (1) 1,000 tons of granite or basalt; (2) 1,900 yards of broken Kentish flints; (3) hire of steam rollers. Mr. E. J. Ennals, Surveyor, 6, Market Hill, Maldon, Essex.

April 19.—**Wilmslow.**—Road Materials.—For the supply of road materials for one year, for the U.D.C. Mr. A. S. Cartwright, Surveyor, Council Offices, Wilmslow.

April 20.—**Denmark.**—Glass.—Supply to the Danish State Railways of various parcels of window, ground and mirror glass and for clear polished glass for covering notices. Department of Overseas Trade, 35, Old Queen-street, London, S.W.1.

April 20.—**Woodhill Spa.**—Road Materials.—For the supply of road materials, for U.D.C. Mr. J. E. Chatterton, Clerk, Horncastle.

April 24.—**Warrington.**—Ashbins.—Supply of 500 galvanised steel ashbins, for the T.C. Cleansing Superintendent, Central Sanitary Depot, Howley.

## ENGINEERING, IRON AND STEEL.

April 8.—**Pembrokeshire.**—Bridge. — Construction of ferro-concrete bridge and other works on the Hennebique system at Treffgarne and Velindre, for the Pembrokeshire C.C. Mr. A. H. Thomas, County Surveyor, Haverfordwest. Deposit £2 2s.

April 10.—**Leicester.**—Pumping Machinery.—For supply of gas or oil engines and pumps, for Water Dept. Mr. G. T. Edwards, Engineer, Waterworks Offices, Leicester. Deposit £5.

April 10.—**London.**—Conveyor.—Supply and erection of (*a*) an ash conveyor of the water immersed, drag-link type; (*b*) an ash hopper. Clerk, County Hall, Spring-gardens, S.W. Deposit £2.

April 10.—**London.**—Railway Material.—Supply to the Bengal-Nagpur Railway Company of open and covered goods wagons and brake van underframes, 2 ft. 6 in. gauge. Offices, 132, Gresham House, Old Broad-street, London, E.C.2. Charge £1 1s.

April 10.—**Siam.**—Railway Accessories.—**Supply of accessories for goods rolling stock, to the Siam State Railways. Messrs C. P. Sandberg, 40, Grosvenor-gardens, London, S.W.1. Charge £2.**

April 10.—**St. Marylebone.**—Motor Chassis.—Supply to the Highways Department of the B.C. of two new or re-conditioned 3-ton petrol motor chassis (30-40 horse-power). Mr. James Wilson, Town Clerk, Town Hall, Marylebone-road, N.W.

April 11.—**Dublin.**—Stone Crusher.—Supply of one 12 in. by 8 in. portable stone crusher and screen, to the T.C. Mr. J. J. Murphy, Town Clerk, Municipal Buildings, Dublin.

April 12.—**Chorley.**—Wrought-Iron Fencing.—For the supply of wrought-iron fencing, &c., for the Astley Park, for the T.C. Borough Surveyor, Town Hall, Chorley.

April 12.—**Middleton.**—Purifiers.—Supply and erection of two purifiers with superstructure and roof, for the T.C. Gas Engineer, Gasworks, Townley-street, Middleton.

April 12.—**Rhondda.**—Electrical Installation.—For wiring 44 houses, for the U.D.C. Mr. J. M. Bowman, Electrical Engineer, Electricity Works, Porth. Deposit £1 1s.

April 12.—**Wandsworth.**—Electric Lighting, etc.—Installation of electric lighting and fire alarms at the Intermediate Schools, Swaffield-road, for the Board of Guardians. Mr. F. J. Curtis, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.18. Deposit £2.

April 12.—**Wolverhampton.**—Electric Installation.—For installing electric cables and mains at the Poor Law Institution, for the Board of Guardians. Mr. Frank Harrison, Clerk, Poor Law Offices, Wolverhampton. Deposit £3 3s.

April 13.—**Manchester.**—Platform, &c.—Supply of 56-ton transformer truck and portable platform. Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Deposit £1 1s.

April 15.—**Newcastle-on-Tyne.**—Bridge Repairs.—Repair of the girder work of the swinging portion of the Newcastle Swing Bridge, for the Tyne Improvement Commissioners. Mr. J. McD. Manson, General Manager, Tyne Improvement Commission, Newcastle-upon-Tyne. Deposit £2 2s.

April 19.—**London.**—Cranes.—Supply to the Bengal Nagpur Railway Co. of two 40-ton steam wrecking cranes. Company's Offices, 132, Gresham House, Old Broad street, London, E.C.2. Charge £1 1s.

April 21.—**London.**—Point Rods.—For the supply of point rods for signal apparatus, for the High Commissioner for India. Director-General, India Store Dept., Belvedere-road, Lambeth, S.E.1.

April 21.—**Portsmouth.**—Sewage Works.—Construction of brick culverts, detritus and screen chambers, suction culvert, pump foundations and buildings and other works at the Sewage Pumping Station at Eastney, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, Westminster, S.W.1. Deposit £5.

April 22.—**Croydon.**—Gas Engine.—For the supply and erection of a gas engine with producer plant and pumps, for the T.C. Borough Engineer, Town Hall, Croydon. Deposit £1 1s.

April 22.—**Sleaford.**—Concrete Reservoir.—For the construction of a 40,000 gallon ferro-concrete reservoir at Hill Top, Wilburn, for the R.D.C. Mr. W. B. Marsden, Engineer, Council Offices, Northgate, Sleaford. Deposit £1 1s.

April 29—**Needham Market.**—Bridge.—Construction of 43 ft. waterway, in three spans, the centre 22 ft; to be reconstructed on an approved system of reinforced concrete, for the East Suffolk C.C. Mr. H. Miller, 16, Museum-street, Ipswich. Deposit £2 2s.

May 2.—**London.**—Locomotives.—For the supply of locomotive engines, for the High Commissioner for India. Director-General, India Store Dept., Belvedere-road, Lambeth, S.E.1.

May 4.—**Leeds, etc.**—Engineering Labour.—Supply of engineering labour during the period of three years in the following districts: Leeds (Mechanical), Newcastle (Electrical and Mechanical), Southampton (Electrical and Mechanical), for H.M. Commissioners of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1.

May 5.—**Chester.**—Embankment.—Rebuilding and strengthening portion of retaining wall and strengthening the whole of the embankment at Grosvenor Bridge, for the T.C. Mr. C. Greenwood, City Engineer, Town Hall, Chester. Deposit £2 2s.

May 7.—**Rochdale.**—Sulphate of Ammonia Plant.—Supply and erection of sulphate of ammonia plant, for the Gas Committee. Chairman, Gas Committee, Gas Works, Rochdale.

May 20.—**Enniskillen.**—Rails.—Supply to the Sligo, Leitrim and Northern Counties Railway Company of 240 tons of British Standard flat-bottom steel rails, with fishplates. Secretary, S.L. and N.C. Railway, Enniskillen.

June 19.—**Argentina.**—Bridges.—Supply and erection of suspension bridges for local authorities. Dept. of Overseas Trade, 35, Old Queen-street, S.W.

August 1.—Siam.—Railway Carriages.—For the supply of 25 underframes for bogie carriages, for the Department of State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, S.W.1. Charge £2.

October 31.—**New South Wales.**—Bridge.—**Construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour from Dawes Point to Milson's Point, for the Government of New South Wales. Agent-General for New South Wales, Australia House, Strand, London, W.C.2.**

## ROAD, SANITARY, AND WATER WORKS.

April 10.—**Bridgend.**—Water Mains.—Providing and laying about 264 lineal yards of 3 in. diameter cast-iron mains, &c., at Evanstown, Gilfach Goch, for the Mid-Glamorgan Water Board. Mr. Eiryn W. Davies, Superintendent, Water Board Offices, Bridgend. Deposit £1 1s.

April 10.—**Hastings.**—Roads.—Forming lawns and paths, and constructing roadway at the new East Sussex Hospital site, Cambridge-road. Mr. Percy H. Oxley, architect, 29, Havelock-road, Hastings.

April 10.—**Hendon.**—Roads.—Fully making up the following private roads within the district: St. George's-road, Templars-avenue (part of), Highcroft gardens, Leeside-crescent (part of), Temple-gardens (part of), and Woodville-gardens, for the Hendon U.D.C. Mr. A. O. Knight, Engineer and Surveyor to the Council, Town Hall, Hendon, N.W.4. Deposit £5.

April 10.—**London.**—Waterworks.—For laying 9,400 yards of cast-iron water main at Peckham Rye, for the Metropolitan Water Board. Mr. H. E. Stilgoe, Chief Engineer, Offices, New River Head, 173, Rosebery-Avenue, Clerkenwell, E.C.1. Deposit £20.

April 10.—**Loughborough.**—Roads.—For street works in connection with the widening of Meadow-lane, for the T.C. Mr. A. H. Walker, Borough Surveyor, Town Hall, Loughborough. Deposit £2 2s.

April 11.—**Inverness.**—Roads.—For road repair works in Lochaber district, for the Inverness-shire C.C. Mr. J. Schoolar, Surveyor's Office, Fort William.

April 11.—**Leeds.**—Roads.—Reconstructing main roads on the Beckett-street Estate, for the Board of Guardians. Mr. James H. Ford, Clerk, Poor Law Offices, South-parade, Leeds.

April 11.—**Truro.**—Paving.—Taking up wood paving and laying in its place on existing foundation about 600 super yards new creosoted deal paving, for the T.C. Mr. F. A. Barnes, City Surveyor, Municipal Buildings, Truro.

April 12.—**Birmingham.**—Roads.—**For the construction of roads, &c., on the Corporation Estate, Ward End, for the T.C. Mr. W. H. Humphries, Engineer, The Council House, Birmingham. Deposit £2.**

April 12.—**Radstock.**—Roads.—For the tar-spraying of about 44,000 yards super of roads, for the U.D.C. Mr. Albert Coles, Clerk, Fortescue-road, Radstock, near Bath.

April 15.—**Bury.**—Water Mains.—Construction of intake chamber and laying of circulating water mains, for the T.C. Mr. J. Ainsworth Settle, Borough Engineer, Corporation Offices, Bury. Deposit £2.

April 15.—**Larne.**—Waterworks.—For improving the water supply, for the U.D.C. Mr. J. H. H. Swiney, Engineer, Avenue Chambers, Belfast. Charge £1 1s.

April 17.—**Armadale.**—Surfacing.—For surfacing roads and laying kerbs, channels, &c., for the T.C. Messrs. Hunter, Duff & Middleton, engineers, 42, Frederick-street, Edinburgh. Deposit £1.

April 17.—**Caerphilly.**—Street Works.—For street works at Caerphilly and Nelson, for the U.D.C. Mr. T. H. Richards, surveyor, Caerphilly. Deposit £2 2s.

April 17.—**Criccieth.**—Groyne.—For the construction of a groyne on the seashore in front of Marine-terrace. Mr. W. George, Clerk, Town Hall, Criccieth.

April 18.—**Carlisle.**—Sewers.—Sewering of portions of Harraby, Upperby, Blackwell and Belle Vue, for the T.C. Mr. Henry C. Marks, City Engineer, 36, Fisher-street, Carlisle. Deposit £3.

April 19.—**Middleton.**—Roads.—Draining and surfacing of a portion of the Market-place, Middleton, in (a) tarred macadam, (b) granolithic paving, for the T.C. Surveyor, Town Hall, Middleton.

April 22.—**Sleaford.**—Waterworks.—For laying cast-iron water mains and the erection of an engine-house, for the R.D.C. Mr. W. B. Marsden, Engineer, Council Offices, Northgate, Sleaford. Deposit £1 1s.

April 24.—**Alsager.**—Borehole.—Deepening an existing borehole, for the U.D.C. Messrs. G. & F. W. Hodson, Consulting Engineers, Loughborough. Deposit £2 2s.

No Date.—**Braintree.**—Gas Mains.—Laying of 430 yards of 4 in. cast-iron gas main in Rayne-road, Braintree, for the Braintree and Bocking Gas Co. Mr. Wm. Surman, Engineer, Gas Works, Braintree.

## Competitions.

(*See Competition News, page* 504.)

## Auction Sales, Tenders, etc.

✱April 11.—**Lewisham.**—Messrs. Norfolk & Prior will sell, by order of the Lewisham B.C., on Lewisham Park housing site, builder's plant, including timber, tools, &c. Auctioneers, Catford Bridge, and 131, Regent-street, W.1.

April 11.—**Watlington, Oxon.**—Messrs. Joseph Hibbard & Sons will sell, by order of the Controller, Timber Disposal Department, at the Depot at Shotridge Woods (2 miles from Watlington Station and 9 miles from Wycombe), plant, stores, and standing beech timber. Auctioneers, 15, Newington Green, Islington, London, N. 16.

✱April 19.—**Bournemouth.**—Messrs. Rawlence & Squarey sale at Havergal Hall, Post Office-road, Bournemouth, freehold marine residential property, known as "Wentworth Lodge," has been disposed of by private treaty, and sale is cancelled.

April 19.—**Three Bridges, Sussex.**—Messrs. Knight, Frank & Rutley will sell by auction a freehold woodland building estate, known as Park Wood, Worth, area over 31 acres, at the "Fox Hotel," at 3 p.m. Auctioneers, 20, Hanover-square, W.1.

✱April 25, 26, and 27.—**Northumberland.**—Messrs. Anderson & Garland will sell, by direction of the Disposal Board, at Cramlington Aerodrome, Northumberland, hutting, corrugated iron sheds, brick buildings, electric generating plant, heating boilers and plant, sanitary fittings. Auctioneers, New Market-street, Newcastle-upon-Tyne.

# TRADE NEWS.

The telephone number of Messrs. Mayfair Services, Ltd., is Grosvenor 2440.

Captain W. H. Maybury has joined Messrs. Ernest Mathews & Co., of 16 & 17, Devonshire-square, E.C., as manager of their Roads Department.

We stated in error last week that Messrs. George Jennings & Son, Ltd., had removed to Dudley Works, 42–44, Leman-street, Aldgate, E. 1; the firm referred to is Messrs. James Jennings & Son, Ltd., the well-known builders.

The sixteenth annual parade of the Commercial Motor Users' Association was held at Lincoln's Inn Fields on March 25, when over 200 vehicles paraded. Points were awarded to each vehicle according to its general condition and the mileage it had completed, and after inspection by a tribunal of judges the *Commercial Motor* Challenge Cup and first prizes were awarded to the team of three Thornycroft vehicles entered by Messrs. Thomas Wethered & Sons, Ltd., of Marlow. Each of the winning trio had completed over 30,000 miles. A second team of three Thornycroft lorries by the same owners was "Highly Commended." The second prizes were won by a team entered by Messrs. Shell-Mex, Ltd., with a mixed team of Thornycroft and other vehicles.

A patent ladder cripple has just been put on the market by Messrs. Cripples, Ltd., of Brighton, which is really a light scaffold, and by which it is claimed that the cost of painting or colouring exterior walls can be reduced by from 25 per cent. to 50 per cent., by enabling the workman to reach his work more easily. It is claimed that this cripple will enable the painter to cover 22 ft. of work with only one move. By the adjustment of irons and chains a light scaffolding (7 ft. long × 18 in. wide) can be erected in a few minutes, which will enable all kinds of repairs to be carried out where the greater part of the cost under the old conditions would be the raising of a scaffold. By the use of chains and hooks fastened to the rungs of the ladder safety is secured at four points.

# PROPOSED NEW BUILDINGS & OTHER WORKS.*

**IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.**

ADWICK-LE-STREET.—Plans have been approved for the erection of a new club and institute at Adwick-le-Street. The architect is Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley, and 19, St. James's-street, Sheffield.

BARNSLEY.—Plans have been approved for the erection of a large new garage in Wellington-street, for the Barnsley Grocers' Co., Ltd. The architect is Mr. N. Whitham, Peel-square, Barnsley. — Plans have been approved for the erection of a new cinema in Princess-street and New-street, Barnsley. The architect is Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley.—Plans have been approved for the erection of a restaurant and shops, Princess-street, Barnsley. The architects are Messrs. Dyson, Cawthorne & Coles, 10, Regent-street, Barnsley.—Plans have been approved for the alterations and additions to a large residence, Mount Vernon-road, Barnsley. The architect is Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley.—Plans have been approved for the erection of a new cinema, Doncaster-road, Barnsley. The architect is Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley.

BATTLE.—Plans passed by R.D.C.: House, Catsfield, for Mr. C. H. Dyer; conversion of army huts into bungalows, for Mr. L. Rancombe and Mr. J. Beeney.

BINGLEY.—Plans passed by U.D.C.: Weft store, Victoria Mills, Bingley, Butler, Wood & Co.; motor garage off Villa-road, Bingley, Mr. H. Illingworth; alterations, "Acorn" Inn, Eldwick, and the "Fisherman" Inn, Dowley Gap, Hammond's (Bradford) Brewery Co., Ltd.; tearoom near Goitstock Mill, the Goitstock Waterfalls Co., Ltd.; loose boxes off Priesthorpe-lane, Bingley, Mr. F. Bradley; and club premises, Barrett-street, Bingley, for Bingley Ex-Service Men's Club, Ltd.

BIRKENHEAD.—Plans passed by T.C.:—Lock-up shop, 188, Grange-road; outbuildings in rear of the house and garage recently erected, Rock-lane East, at Rock Park; shop and billiard room, adjoining 212, Grange-road; conversion of building, Lingdale-road North, into a shop and a dairy; picture hall, café and a lock-up shop, Palm-grove; alterations to shop, 43, Oxton-road; garage, Scott's-place, off Upton-road; garage and store, Ivy-street.

BRIDLINGTON.—Plans passed by T.C.: Messrs. Waite & Vaux, alterations, 15, Promenade, for Mr. W. Foster Brigham; Mr. J. R. Earnshaw, alterations to motor garage, Marshall-avenue, for Mr. W. Finn; Mr. J. R. Earnshaw, motor garage, Beaconsfield Estate, for Messrs. Trown & Tooth; Messrs. Blackmore, Sykes & Co., alterations to shop premises, 35, King-street, for Mr. J. R. Collinson; Mr. J. E. Evans, wooden building, James-street, for Mr. J. E. Evans; Messrs. Waite & Vaux, alterations, 8, Marlborough-terrace, for Mr. Snow; Messrs. Waite & Vaux, drainage of premises, Prospect-street, for Mr. F. Usher; Mr. F. R. Waller, two houses on the east side of Cardigan-road, for Mr. B. Evans; Mr. M. B. Parkin, house, Kingston-road, for Mr. J. McCann; Messrs. Waite & Vaux, alterations to premises, King-street, for the National Provincial and Union Bank of England; Mr. C. F. Johnson, additions to house, Station-road, for Mr. G. W. Harness; Mr. C. F. Johnson, shop front, 1A, Blackburn-avenue, for Mr. J. Birton; Mr. J. R. Earnshaw, motor garage, "Eastdene," Station-road, for Mr. F. W. Lendis; Mr. J. R. Earnshaw, additions, 30, St. Hilda-street, for Mr. A. W. Tinker; Mr. M. B. Parkin, two houses, Cardigan-road, for Mr. C. Gant; Mr. M. B. Parkin, additions to house, Shaftesbury-road, for Mr. R. F. Helm; Mr. M. B. Parkin, alterations, 15, Queen-street, for Mr. G. Anderson; Mr. C. F. Johnson, house, Station-road, for Mr. C. M. Richardson; Mr. J. R. Earnshaw, house, corner of Roundhay and Summerfield-road, for Mr. F. Sprink; Mr. A. Whinstanley, re-arrangement of lavatories, &c., at the premises, Esplanade, for Mr. C. Riley.

BRIGHTON.—The T.C. has received the sanction of the Ministry of Health to borrow £6,525 for twenty years for laying out a portion of the East Brighton Estate for a public park or recreation ground: and £2,684 for fifteen years for the widening of the Grand parade and Pavilion-parade, in connection with the improvements to the north-eastern gardens of the Royal Pavilion.

BURNLEY.—The Tramways Committee have recommended the T.C. to carry out track relaying works at a cost of nearly £13,000.

CLOWN.—The deputation of the R.D.C. which waited upon the Health Minister with regard to the shortage of houses in the rural area has obtained the sanction of the Ministry to the erection of 24 additional houses—eight each at Clown, Whitwell, and Barlborough.

COCKERMOUTH.—The T.C. has instructed Messrs. Taylor & Wallin, of Carlisle, to make a detailed examination of the sewers and outfall works and to prepare a comprehensive report as to how the sewage disposal works can be put into an efficient state at a reasonable cost.

COLWYN BAY.—Plans passed by U.D.C.: Garage at Seawood-hill, Hesketh-road, Old Colwyn, for Dr. Weston; garage at "Westfields," Coed Pella-road, for Mr. F. G. Isherwood; alterations to premises at rear of 23, Abergele-road, for J. Waterworth & Sons; alterations to Powysland Library, Prince's-drive, for Mr. E. Jones; stable and workshop at Carlton-terrace, for Mr. R. Hughes; motor garage at rear of Stanton House, Whitehall-road, for Dr. C. E. Butterworth; garage at Rest Cottage, Hafotty-lane, for Mr. W. Musker; garage at Budget Gate, Marine-drive, for Mr. W. W. Winstanley; new front at Post Office, Rhos, for Mr. T. E. Berts; workshop at rear of "Walkdene," Albert-road, for Mr. D. Fishwick; house in Llandudno-road, for Mr. J. T. L. Holmes; factory and warehouse in Douglas-road, for Mr. O. Jones; garage at rear of "Starndale," Pendorian-avenue, for Mr. W. T. Williams; additional kitchen at rear of "Gwyndy," for the English Presbyterian Church; conservatory at Beach House, St. George's-road, for Mr. W. Horton; garage at rear of "Rayleigh," Wynne-avenue, for Mr. W. Evans; two houses at Mochdre, for R. Davies & Son.

DERBY.—Plans passed by T.C.: Garage, 155, Woodgrove-road, Mr. T. W. Smith; garage, 137, Woodgrove-road, Mr. Robinson; garage, Ightenhill Park-lane, Mr. T. Redman; workshop, rear of Dorset-street, Mr. R. Macnally (Woodking Firelighter Co.); workshop, Springhill-road, Mr. J. Heeds; Presbytery at St. Augustine's, Lowerhouse-lane, Rev. J. Hardman; garage, Kensington-place, Coal Clough-lane, Messrs. M. Outhwaite & Sons; shop front, 107, Coal Clough-lane, Mr. J. Birchall; alterations to Heald Works, Stanley-street, Messrs. H. Spencer, Ltd.; billiard hall, Croft-street and Yorkshire-street, Mr. A. Taylor.

DUNDEE.—Plans deposited: Adelaide-place, garage for W. S. Edward; Blackness-road, alterations for Peter Rossi; Milner-street, temporary garage for W. R. MacEwan; Nethergate, garage, &c., for Thos. Muir, Son & Patton, Ltd.; Old Glamis-road, villas, for Hugh T. Bowman; Ward-road, alterations, for Thos. Cuthbert & Son; New street between Kingsway and extension of school road, for Sir Herbert K. Ogilvy, Bart.

KENDAL.—Plans passed by T.C.: of bungalow on land between Airethwaite and Horncop-lane, for Messrs. J. Hine & Son; conversion of stables into garage at Castle Garth, for Messrs. W. D. Mark & Co.; garage at Lynn Garth, Gillinggate, for Mr. H. B. Greenwood; garage on land near Ghyllside, for Mr. R. H. Greenwood; additions to Sports Pavilion at Stramongate School, architect, Mr. J. Hutton; wash-house in Yard, 77, Highgate, for Mr. J. Shepherd, architect, Mr. J. Stalker.

LEEDS.—Conversion of chapel into Mission Hall, etc., Skilbeck-street, for the Trustees of the Leeds Wesleyan Mission.

LONDON (BERMONDSEY).—Plans passed by B.C. one-story shops, 238-244, Southwark Park-road, Mr. A. G. Leighton, for Mr. J. C. Franey; one-story shops, 236-246, Southwark Park-road, Mr. A. G. Leighton, for Mr. J. A. Franey and Messrs. Francis & Campion, Ltd.; reconstruction of drainage, 8-16, Glebe-road, for Slippers Estate; drainage, 87, Weston-street, Messrs. Garland, Smith & Co., for Messrs. Schroder, Mitchell & Weir.

LONDON (DEPTFORD).—The L.C.C. has sanctioned the borrowing of £2,000 by the B.C. for sewer reconstruction works.

LONDON (HACKNEY).—Plans passed by B.C.: Alterations, 21, Tudor-grove, for Mr. S. Shaws; addition to workshop, Mortimer-road, for Mr. G. Keetch; drainage works, 12, 14, 16 and 18, Caroline-street, for Mr. H. G. Brooks; eight motor car sheds, etc., Rectory-road, for Messrs. T. Gates & Son.

LONDON (LEWISHAM).—Plans passed by B.C.: Erection of 41, 48, 40 and 34 houses on Bellingham Estate for the L.C.C.; drainage, 14 to 28, Ennasdale-road for Mr. J. Morton; drainage of pavilions at Private Banks Athletic Ground; house and shop, 193, Perry Vale, for Mr. E. C. Christmas.

LONDON (ST. PANCRAS).—Approval has been given to the B.C. by the L.C.C., for the borrowing of £72,928 for housing purposes.

LONDON (SOUTHWARK).—Drainage plans passed by B.C.: By the London Joint City and Midland Bank, Ltd., to 25, New-cut; by Amalgamated Press, Ltd., to Amalgamated Press, Sumner-street; by William R. Wood, to 1, Hampton-street; R. White & Sons, Ltd., to White's premises, Bagshot-street; by Lincoln Bennett & Co., to 241, Union-street; by W. Johnson & Sons, to 18, Union-street; by Borough Engineer, to Lavington-street Baths; by King & Edwards, to 314, 316 & 318, Old Kent-road; by the Trustees of the Backhouse Estate, to 186, Old Kent-road.

MAIDSTONE.—Plans presented by Mr. J. Arkcoll, for the extension of premises in Romney-place, have been passed.

MALTON.—Mr. C. E. Roberts (of the Ministry of Health) has held an inquiry into the provision of a scheme of water supply for the R.D.C. estimated to cost £41,500.

MANCHESTER.—The Education Committee proposes to reconstruct the temporary buildings at Heald-place, which would provide additional accommodation for 475 children, at an estimated cost of £3,500.

MEXBOROUGH.—Plans have been approved for the erection of a new cinema in Dolcliffe-road, Mexborough, near Rotherham. The architect is Mr. P. A. Hinchliffe, F.R.I.B.A., 14, Regent-street, Barnsley.

MIDDLESBROUGH. — Sixteen plans, involving three new houses in Daleston-avenue, alterations to shops, houses, and public-houses, and the erection of new stores, were dealt with by the Plans Committee last week.

NORTHAMPTON.—Plans passed by T.C.: 3 houses, The Broadway, for Messrs. A. Glenn & Sons; amendment to roof construction, Abington-street, for Messrs. Doffman; kitchen, Wellingborough-road, for Mr. Beaumont; 2 houses, Thursby-road, for Mr. W. H. Foster billiard room, Newton House, Park-avenue, for Mr. A. Watts; 4 cottages, Essex-street, Semilong, for Messrs. E. D. Sharman & Son; reconstruction of old cottage, The Green, for Uandi, Ltd.; alterations to premises, Barrack-road, for Mr. W. Tinsley; drainage scheme, Spinney Hill, for Mr. J. Collier; alterations to store to form garage, Upper Mounts, for Mr. E. Bush; new road and sewers (No. 3 Estate), portion of Wantage Estate, No. 3, for the Northampton Town & County Benefit Building Society; rebuilding premises, Newland, for Messrs. T. Manning & Co.

NORTON.—The U.D.C. has passed plans for the erection of a new picture house to be erected in Church-street, Norton, by a private company.

SALONICA.—H.M. Consul-General at Salonica states that his attention has been drawn to schemes for the rebuilding of the area in Salonica devastated by fire during the war. The present position is that this area has been divided into sites which are already being put up for auction, so that when the financial side of the scheme can be adjusted, actual building may take place. In connection with these schemes, the Consul-General has been approached by a Constructional Engineer in Salonica, who desires to be placed in communication with United Kingdom firms dealing in building materials from whom he could obtain quotations for the undermentioned requirements. The enquirer requests that where possible a catalogue and illustrated price list should be sent by any firm communicating with him, and the prices quoted should be c.i.f. Salonica. Girders: For construction of frame and roofing. Roofing: Must be light and strong; corrugated asbestos cement sheeting is apparently required to resist local climatic conditions. Collar lights: With frames complete; estimated quantity required, 20 sets; size, 2 metres × 1 metre. Window frames: Metal; required for high level; 50 per cent. must open; to be hung in centre or at top. Wire grilles: Quantity about 56 sets; size, 3 metres × 2 metres. Shutters: Iron, for shop fronts; type, closing upon themselves by flowing from right to left or *vice versa*; quantity required, about 88 sets; size, 3½ metres high × 3 metres wide. Central heating: For a dwelling house of twelve rooms, five on ground floor and seven on first floor. The name and address of the engineer referred to may be obtained by any United Kingdom manufacturers and exporters interested, on application to the Department of Overseas Trade, 35, Old Queen-street, London, S.W. 1.

SCARBOROUGH.—As a result of the recent landslip immediately south of the South Bay Bungalows, the Borough Engineer has been instructed to submit a scheme for the development of the land from the bungalows to the bathing pool.

SOUTHAMPTON.—The Ford Motor Co. have acquired from the Corporation a site for a factory at Millbrook.

UTTOXETER.—Plans passed by R.D.C.: Alterations to house at Beemhurst, for Mr. Reeves.

WOOD GREEN.—The U.D.C. has approved plans for St. Andrew's Hall, Muswell Hill.

YORK.—Plans passed by T.C.: Central Working Men's Club, alterations, 41 & 43, Tanner-row; Robert Sinclair Products Co., alterations, 34, Coney-street; United Yeast Co., Ltd., motor garage, Springfield House, Hull-road; S. Gawthorne, shed, 57, Holgate-road; North Riding Haulage Co., motor shed, Clarence-street; G. Wright, coal house, 11, St. Oswald's-road; Governors of St. Peter's School, swimming bath, Clifton; Governors of St. Peter's School, classrooms, Clifton; Rose & Co., alterations and additions, Coppergate and High Ousegate; Tadcaster Tower Brewery Co., Ltd., additions, Cattle Market Inn, Fawcett-street; Tadcaster Tower Brewery Co., Ltd., sanitary improvements, Victoria Hotel, Heslington-road; A. S. Rowntree, bathroom, "Chalfonts," Tadcaster-road; York Race Committee, roof over stand, Knavesmire; E. Hall, studio, 6, Princess-street; F. Parish, greenhouse, 106, East-parade; Mrs. Lawson, wash-house, 29, Heworth-green; E. J. Treasure, house, Hempland-lane; F. De Little, bungalow, East-parade; G. Agar, motor house, 27, Grove-terrace.

WORSBORO' BRIDGE.—Plans have been approved for the erection of a new cinema, Worsboro' Bridge, near Barnsley. The architect is Mr. P. A. Hinchliffe F.R.I.B.A., 14, Regent-street, Barnsley.

## FIRES.

BEIGHTON.—The local cinema theatre has been destroyed by fire.

BRADFORD.—A fire has occurred at the premises of Messrs. Boldy & Sons, engineers, East Parade.

DUNDEE.—An outbreak of fire has occurred in Meldrum's Cycle and Motor Works, Esplanade, the proprietors of which are Messrs. D. F. Mann & J. Boyd Scott.——A fire has occurred in a boot and shoe shop at 205, Overgate, occupied by Mr. Isaac Jacobs. ——Damage to the extent of £600 has been caused by fire in the bakehouse of Messrs. John Scrimgeour & Sons, Ltd., wholesale provision merchants, at 12, Meadow-street.

GLASGOW.—Damage estimated at about £5,000 has been caused by an outbreak of fire which occurred in the premises of Messrs. Turner & Co., electrical engineers, 24, Broad-street, Bridgeton.——A fire in an office at South Exchange-place, occupied by H. Fierston, tailor, and H. L. Furst, warehouseman, caused damage estimated at £800.

IRVINE.—A fire has occurred at the hosiery factory owned by Messrs. A. Cunningham, Ltd., situated at Fullarton-street.

MEIGLE.—About £2,000 damage has been done by fire at Craigie Lynn Sawmill, near Meigle, belonging to Mr. Robert Easson.

PORT-GLASGOW.—An outbreak of fire has occurred at Chapelton School, which completely destroyed the entire central portion of the building.

SHEFFIELD.—The shop of Mr. G. Gardener, boot-maker, 363, Staniforth-road, has been the scene of a fire.

* See also our List of Contracts, Competitions, etc.

# PRICES CURRENT OF MATERIALS.*

**[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]**

## BRICKS, &c.

| Per 1,000 Alongside, in River Thames up to London Bridge. | £ s. d. |
|---|---|
| Best Stocks | 4 13 0 |

| Per 1000, Delivered at London Goods Stations. | £ s. d. | | £ s. d. |
|---|---|---|---|
| Fletton, at King's Cross | 3 5 0 | Best Blue Pressed Staffs. | 10 11 6 |
| Do. grooved for plaster | 3 7 0 | Do. Bullnose | 11 1 6 |
| Do. Bullnose | 4 0 0 | Blue Wire Cuts | 8 11 6 |
| Best Stourbridge Fire bricks:— | | | |
| 2½ in. | 11 3 0 | 3 in. | 13 2 0 |
| Glazed Bricks— | | | |
| Best White, Ivory, and Salt Glazed Stretchers | 24 0 0 | D'ble Str'tch'rs | 32 10 0 |
| | | D'ble Headers | 29 10 0 |
| Headers | 23 10 0 | One Side and two Ends | 33 10 0 |
| Quoins, Bullnose and 4½in. Flats | 30 10 0 | Two Sides and one End | 34 10 0 |
| | | Splays and Squints | 32 0 0 |

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

| | s. | d. | | |
|---|---|---|---|---|
| Thames Ballast | 14 | 0 | per yard, | delivered 2 miles radius Paddington: |
| Pit Sand | 17 | 0 | „ „ | |
| Thames Sand | 19 | 0 | „ „ | |
| Best Washed Sand | 19 | 0 | „ „ | |
| ¾ in. Shingle for Ferro-Concrete | 19 | 0 | „ „ | |
| ½ in. „ „ | 20 | 0 | „ „ | |

Per ton delivered in London area in full van loads.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Best Portland Cement. British Standard Specification Test | 3 10 6 | | 3 16 0 |

63/6 alongside at Vauxhall in 80-ton lots.

| | |
|---|---|
| Ferrocrete per ton extra on above | 10 0 |

Note.—The sacks are charged at 1s. 9d. each and credited at 1s. 6d. each if returned in good condition within three months. carriage paid.

Best Ground Blue Lias Lime 2 8 0 at rly. depot.
Grey Stone Lime 61s. 0d. per ton delivered in City and Central districts.
Stourbridge Fireclay in s'cks 37s. 8d. per ton at rly. dpt.

## STONE.

| | s. | d. |
|---|---|---|
| Bath Stone—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube | 3 | 2½ |
| Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube | 3 | 5½ |
| Do. do. delivered on road wagons at Nine Elms Depot | 3 | 6½ |
| Portland Stone— | | |
| Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube | 4 | 11½ |
| Do. do. delivered on road wagons at above stations, per ft. cube | 5 | 0½ |
| White basebed, 3d. per ft. cube extra. | | |
| Note.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft. | | |
| York Stone, Blue—*Robin Hood Quality.* | | |
| Delivered at any Goods Station London. | s. | d. |
| 6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super | 6 | 1½ |
| 6 in. rubbed two sides, ditto „ | 6 | 7½ |
| 3 in. sawn two sides slabs (random sizes) „ | 2 | 7 |
| 2 in. to 2½ in. sawn one side slabs (random sizes) „ | 1 | 8 |
| 1½ in. to 2 in. ditto, ditto „ | 1 | 5 |
| Hard York— | | |
| Delivered at any Goods Station London. | | |
| Scappled random blocks Per Ft. Cube | 7 | 6 |
| 6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super | 6 | 6 |
| 6 in. rubbed two sides ditto „ | 7 | 2 |
| 4 in. sawn two sides slabs (random sizes) „ | 3 | 4 |
| 3 in. ditto, ditto „ | 2 | 10 |
| 2 in. self-faced random flags Per Yard Super | 9 | 9 |

## WOOD.

### GOOD BUILDING DEAL.

| Inches | £ s. | |
|---|---|---|
| 4 × 11 | 36 0 | per standard |
| 4 × 9 | 35 0 | „ |
| 4 × 8 | 30 0 | „ |
| 4 × 7 | 30 0 | „ |
| 3 × 8 | 30 0 | „ |
| 3 × 7 | 25 0 | „ |
| 2½ × 7 | 25 0 | „ |
| 3 × 6 | 25 0 | „ |
| 3 × 11 | 34 0 | „ |
| 2 × 11 | 32 0 | „ |
| 3 × 9 | 30 0 | „ |
| 2½ × 9 | 30 0 | „ |
| 3 × 4½ | 20 10 | „ |
| 3 × 4 | 20 10 | „ |

### PLANED BOARDS.

| | | |
|---|---|---|
| 1 × 11 | 42 10 | „ |
| 1 × 9 | 37 10 | „ |

### PLAIN EDGE FLOORING.

| Inches | | |
|---|---|---|
| ½ | 20/- | per square |
| ⅝ | 22/6 | „ |
| ¾ | 25/- | „ |
| 1¼ | 32/6 | „ |
| 1½ | 44/- | „ |

### TONGUED AND GROOVED FLOORING.

| Inches | | |
|---|---|---|
| 1 | 25/- | per square |
| 1¼ | 32/6 | „ |
| 1½ | 44/- | „ |

## WOOD (*Continued*).

### MATCHINGS (BEST).

| Inches | | |
|---|---|---|
| ½ | 17/6 | per square |
| ⅝ | 22/6 | „ |
| ¾ | 25/- | „ |

| Inches BATTENS. | s. | d. | |
|---|---|---|---|
| 2 × 2 | 3 | 0 | per 100 ft. |

### SAWN LATHS.

| | | | | | | |
|---|---|---|---|---|---|---|
| Per bundle | | | | | 0 | 4 0 |
| Dry Wainscot Oak, per ft. super, as inch | 0 | 2 | 6 | to | 0 | 3 0 |
| ¼ in. do. do. | 0 | 1 | 10½ | to | 0 | 2 6 |
| Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch | 0 | 2 | 3 | to | 0 | 3 0 |
| Cuba Mahogany | 0 | 3 | 6 | to | 0 | 4 0 |
| Teak (Rangoon, Moulmein or Java), per load | 52 | 10 | 0 | to | 55 | 0 0 |
| American Whitewood planks, per ft. cube | 0 | 16 | 0 | to | 0 | 18 0 |
| Best Scotch Glue, per cwt. | 7 | 2 | 0 | to | — | |
| Liquid Glue, per cwt. | 4 | 18 | 0 | to | 6 | 0 0 |

## SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

| | | £ s. d. |
|---|---|---|
| Best Blue Bangor Slates. | 24 by 12 | 46 10 0 |
| „ „ „ | 22 by 12 | 42 5 0 |
| First quality „ „ | 22 by 11 | 39 0 0 |
| „ „ „ | 20 by 12 | 37 2 6 |
| Best Blue Portmadoc | 20 by 10 | 31 15 0 |
| „ „ | 18 by 10 | 26 5 0 |
| First quality „ | 18 by 9 | 23 2 6 |
| „ „ | 16 by 10 | 22 0 0 |
| „ „ | 16 by 8 | 17 2 6 |

## TILES.

| | Per 1,000 f.o.r. London. £ s. d. |
|---|---|
| Best machine-made tiles from Broseley or Staffordshire district | 7 0 0 |
| Ditto hand-made ditto | 7 15 0 |
| Ornamental ditto | 8 0 0 |
| Hip and valley tiles (per dozen) | 0 12 0 |

## METALS.

| Joists, Girders, &c., to London Station per ton— | £ s. d. |
|---|---|
| R. S. Joists, cut and fitted | 14 10 0 |
| Plain Compound Girders | 16 10 0 |
| Stanchions | 18 0 0 |
| In Roof Work | 22 0 0 |

Wrought Iron Tubes and Fittings—
(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

| Tubes. (all sizes). | Fittings. Up to 2″. | Fittings. Over 2″. | Flanges. Up to 2″. | Flanges. Over 2″ |
|---|---|---|---|---|
| Gas | 47½% | 45 % | 50 % | 60 % | 65 % |
| Water | 41½% | 40 % | 45 % | 55 % | 60 % |
| Steam | 35 % | 35 % | 40 % | 50 % | 55 % |
| Galv'd— | | | | | |
| Gas | 32½% | 37½% | 42½% | 52½% | 57½% |
| Water | 25 % | 32½% | 37½% | 47½% | 52½% |
| Steam | 17½% | 27½% | 32½% | 42½% | 47½% |

L.C.C. Coated Soil Pipes—London Prices ex works.

| | Pipe. s. d. | Bends, stock angles. s. d | Branches, stock angles. s. d. |
|---|---|---|---|
| 2 in. per yd. in 6fts plain | 3 10½ | 3 4 | 4 0 |
| 2½ in. „ | 4 8 | 3 8 | 5 0 |
| 3 in. „ | 5 6½ | 4 0 | 6 0 |
| 3½ in. „ | 6 1 | 5 0 | 7 0 |
| 4 in. „ | 6 10½ | 5 8 | 8 0 |

Rain-Water Pipes, &c.

| | Pipe. s. d. | Bends, stock angles. s. d. | Branches, stock angles. s. d. |
|---|---|---|---|
| 2 in. per yd. in 6fts. plain | 2 6½ | 2 0 | 2 8 |
| 2½ in. „ „ | 2 9½ | 2 4 | 3 2½ |
| 3 in. „ „ | 3 4½ | 2 10 | 4 3 |
| 3½ in. „ „ | 4 0 | 3 4 | 5 0 |
| 4 in. „ „ | 4 6 | 4 1½ | 6 1 |

L.C.C. Drain Pipes.—9 ft. lengths. London Prices per yd.: 4 in., 5/9. .. 5 in., 7/2. .. 6 in., 8/9.

| | Per ton in London. £ s. d. | | £ s. d. |
|---|---|---|---|
| Iron— | | | |
| Common Bars | 13 10 0 | to | 14 10 0 |
| Staffordshire Crown Bars — good merchant quality | 14 10 0 | .. | 15 10 0 |
| Staffordshire "Marked Bars" | 17 10 0 | .. | 18 10 0 |
| Mild Steel Bars | 12 10 0 | .. | 13 10 0 |
| Steel Bars. Ferro-Concrete quality, basis price | 12 10 0 | .. | 13 10 0 |
| Hoop Iron, basis price | 17 0 0 | .. | 18 0 0 |
| „ „ Galvanised | 31 0 0 | .. | 33 0 0 |
| Soft Steel Sheets, Black— | | | |
| Ordinary sizes to 20 g. | 15 0 0 | .. | 16 0 0 |
| „ „ „ 24 g. | 16 0 0 | .. | 17 0 0 |
| „ „ „ 26 g. | 17 10 0 | .. | 19 10 0 |
| Sheets Flat Best Soft Steel, C.R. & C.A. quality— | | | |
| Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g. | 21 0 0 | .. | 22 0 0 |
| Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g. | 22 0 0 | .. | 23 0 0 |
| Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g. | 24 0 0 | .. | 26 0 0 |
| Flat and Galvanised Corrugated Sheets— | | | |
| Ordinary sizes, 6 ft. to 9ft. 20 g. | 21 10 0 | .. | 22 10 0 |
| Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g. | 22 0 0 | .. | 23 0 0 |
| Ordinary sizes, 6ft. to 9ft. 26 g. | 24 0 0 | .. | 25 0 0 |

## METALS (*Continued*).

| | Per ton in London. £ s. d. | | £ s. d. |
|---|---|---|---|
| Sheets Galvanised Flat, Best quality— | | | |
| Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker | 27 0 0 | .. | 28 0 0 |
| Best Soft Steel Sheets, 22 g. and 24 g. | 28 0 0 | .. | 29 0 0 |
| Best Soft Steel Sheets, 26 g. | 30 0 0 | .. | 31 0 0 |
| Cut Nails, 3in. to 6in. | 24 10 0 | .. | 25 10 0 |

(under 3in. usual trade extras.)

Metal Windows—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/7 to 1/10 per foot super.

## LEAD, &c.

| Delivered in London. | £ s. d. | | |
|---|---|---|---|
| Lead—Sheet, English, 4 lb. and up | 33 0 0 | — | — |
| Pipe in coils | 33 10 0 | .. | — |
| Soil Pipe | 36 0 0 | .. | — |
| Compo pipe | 37 0 0 | .. | — |

Note—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

| | | | |
|---|---|---|---|
| Old lead, ex London area, at Mills per ton | 19 0 0 | .. | — |
| Do., ex country, carriage forward per ton | 20 0 0 | — | — |
| Copper— | | | |
| Strong Sheet per lb. | 0 2 3 | — | — |
| Thin „ „ | 0 2 4 | .. | — |
| Copper nails „ | 0 2 3 | .. | — |
| Copper wire „ | 0 2 4 | — | — |
| Tin—English Ingots „ | 0 1 9 | .. | — |
| Solder—Plumbers' „ | 0 0 10 | .. | — |
| Tinmen's „ | 0 1 0 | .. | — |
| Blowpipe „ | 0 1 3 | .. | — |

## GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES

| Per Ft. | | Per Ft. | |
|---|---|---|---|
| 15 oz. fourths | 4½d. | 32 oz. fourths | 9½d. |
| „ thirds | 5½d. | „ thirds | 11d. |
| 21 „ fourths | 6½d. | Obscured Sheet, 15 oz. | 7d. |
| „ thirds | 6½d. | 21 „ | 9d. |
| 26 „ fourths | 7½d. | Fluted and Enamelled 15 „ | 11d |
| „ thirds | 8½d. | Fluted and Enamelled 21 „ | 1/2 |

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

| | Per Ft. |
|---|---|
| ⅛ Rolled plate | 4½d. |
| 3/16 Rough rolled | 6d. |
| ¼ Rough rolled | 6½d. |
| Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white | 7d. |
| Ditto, tinted | 9½d. |
| Rolled Sheet | 6d. |
| White Rolled Cathedral | 5½d. |
| Tinted do. | 7½d. |

Cast Plate is same price as rough rolled.

## PAINTS, &c.

| | £ s. d. |
|---|---|
| Raw Linseed Oil in pipes per gallon | 0 3 7 |
| „ „ „ in barrels „ | 0 3 8 |
| „ „ „ in drums „ | 0 3 9 |
| Boiled „ „ in barrels „ | 0 4 0 |
| „ „ in drums „ | 0 4 2 |
| Turpentine in barrels „ | 0 6 0 |
| „ in drums (10 gall.) „ | 0 6 3 |
| Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.) | 54 5 0 |
| Genuine White Lead Paint— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered | 76 0 0 |
| Red Lead, Dry (packages extra) per ton | 37 0 0 |
| Best Linseed Oil Putty per cwt. | 0 17 0 |
| Filocel per cwt. | 0 15 6 |
| Size. X D Quality fkn. | 0 4 6 |

## VARNISHES, &c.

| | | Per gallon. £ s. d. |
|---|---|---|
| Oak Varnish | Outside | 0 15 0 |
| Fine ditto | ditto | 0 17 2 |
| Fine Copal | ditto | 1 1 6 |
| Pale Copal | ditto | 1 2 6 |
| Pale Copal Carriage | ditto | 1 4 6 |
| Best ditto | ditto | 1 14 6 |
| Floor Varnish | Inside | 0 19 0 |
| Fine Pale Paper | ditto | 0 18 0 |
| Fine Copal Cabinet | ditto | 1 2 6 |
| Fine Copal flatting | ditto | 1 0 6 |
| Hard drying Oak | ditto | 0 18 0 |
| Fine Hard drying Oak | ditto | 0 19 0 |
| Fine Copal Varnish | ditto | 1 0 6 |
| Pale ditto | ditto | 1 2 6 |
| Best ditto | ditto | 1 14 6 |
| Best Japan Gold Size | | 0 12 6 |
| Best Black Japan | | 0 18 0 |
| Oak and Mahogany Stain (water) | | 0 17 6 |
| Brunswick Black | | 0 11 0 |
| Berlin Black | | 0 16 0 |
| Knotting (patent) | | 1 16 0 |
| French and Brush Polish | | 1 8 0 |
| Liquid Dryers in Terebine | | 0 13 6 |
| Culrass Black Enamel | | 0 7 0 |

* The information given on this page has been specially compiled for The Builder and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

# CURRENT PRICES FOR BUILDING WORK IN LONDON.*

## EXCAVATOR.

| | | s. | d. |
|---|---|---|---|
| Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep .... | per yard cube | 15 | 6 |
| Add if in clay ..... | " " | 1 | 9 |
| Add for every additional depth of 6 ft. ..... | " " | 1 | 3 |
| Planking and strutting to trenches ..... | per foot super | 0 | 7 |
| Do. to sides of excavation, including shoring | " " | 1 | 2 |

## CONCRETOR.

| | | s. | d. |
|---|---|---|---|
| Portland cement concrete in foundation 1 to 6 .. | per yard cube | 42 | 0 |
| Add if in underpinning in short lengths ..... | " " | 9 | 6 |
| Add if in floors 6 in. thick ..... | " " | 3 | 10 |
| Add if in beams ..... | " " | 4 | 9 |
| Add if aggregate 1 : 2 : 4 ..... | " " | 12 | 0 |
| Add for hoisting not exceeding 10 ft. beyond the first 10 ft. ..... | " " | 4 | 0 |

## BRICKLAYER.

| | | £ | s. | d. |
|---|---|---|---|---|
| Reduced brickwork in lime mortar and Fletton bricks ..... | per rod | 38 | 10 | 0 |
| Add if in stocks ..... | " | 8 | 10 | 0 |
| Add if in Staffordshire blues ..... | " | 25 | 10 | 0 |
| Add if in Portland cement and sand ..... | " | 3 | 10 | 0 |

### FACINGS.

| | | s. | d. |
|---|---|---|---|
| Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks ..... | per ft. super | 0 | 0 | 1½ |

### POINTING.

| | | s. | d. |
|---|---|---|---|
| Neat flat strucks or weathered joint..... | " " | 0 | 0 | 3 |

### ARCHES.

| | | s. | d. |
|---|---|---|---|
| Extra only to the price of ordinary brickwork :— | | | |
| Fair external in half brick rings ..... | " " | 0 | 0 | 11½ |
| Axed in stocks ..... | " " | 0 | 1 | 11 |
| Rubbed and gauged jointed in putty camber or segmental ..... | " " | 0 | 6 | 8 |

### SUNDRIES.

| | | s. | d. |
|---|---|---|---|
| Damp course in double course of slates breaking joint and bedded in Portland cement ..... | " " | 0 | 1 | 5 |
| Setting ordinary register grates and stoves .... | each | 1 | 1 | 0 |
| Setting kitchener, including forming flues, &c., with all necessary fire bricks ..... | " | 5 | 5 | 0 |

## ASPHALTER.

| | | s. | d. |
|---|---|---|---|
| Half-inch horizontal damp course ..... | per yard sup. | 7 | 6 |
| Three-quarter-inch vertical damp course ..... | " " | 11 | 8 |
| ¾ inch on flats in two thicknesses..... | " " | 8 | 6 |
| Angle fillet ..... | per foot run | 0 | 3 |
| Skirting and fillet 6 in. high ..... | " " | 1 | 4 |

## MASON.

| | | s. | d. |
|---|---|---|---|
| York stone templates fixed ..... | per foot cube | 16 | 3 |
| York stone sills fixed ..... | " " | 28 | 6 |
| Bath stone and all labour fixed ..... | " " | 15 | 0 |
| Portland stone fixed ..... | " " | 23 | 0 |

## SLATER.

| | | s. | d. |
|---|---|---|---|
| Welsh 16 in. × 8 in. 3 in. lap, including nails.... | per square | 98 | 0 |
| Do. 20 in. × 10 in. Do. Do. .... | " | 115 | 0 |
| Do. 24 in. × 12 in. Do. Do. .... | " | 117 | 6 |

## CARPENTER AND JOINER.

| | | s. | d. |
|---|---|---|---|
| Fir framed in plates .....per foot cube | | 6 | 6 |
| Do. joists ..... | " " | 7 | 6 |
| Do. roofs, floors and partitions ..... | " " | 7 | 6 |
| Do. trusses ..... | " " | 9 | 6 |

| | | ¾" | 1" | 1¼" | 2" |
|---|---|---|---|---|---|
| Deal rough close boarding ..... | per sq. | 42/– | 48/– | 56/– | 85/– |

| | | s. | d. |
|---|---|---|---|
| Flat centering for concrete floor, including struts or hangers .. " ..... | | 63 | 0 |
| Do. to beams .....per ft. sup..... | | 1 | 6 |
| Centres for arches ..... " ..... | | 2 | 0 |
| Gutter boards and bearers ..... " ..... | | 1 | 6 |

| FLOORING. | | ¾" | 1" | 1¼" | 1½" |
|---|---|---|---|---|---|
| Deal-edges shot ..... | per sq. | | 49/– | 58/– | 67/– |
| Do. tongued and grooved ..... | " | | 54/– | 65/– | 72/– |
| Do. matchings ..... | " | 45/– | 55/– | | |
| Moulded skirting, including backings and grounds .....per ft. sup. | | 1/8 | 2/1 | 2/3 | 2/9 |

| SASHES AND FRAMES. | | s. | d. |
|---|---|---|---|
| One-and-a-half moulded sashes or casements .... | per foot super | 1 | 11 |
| Two Do. Do. Do. .... | " " | 2 | 4½ |
| Add for fitting and fixing ..... | " " | 0 | 6 |
| Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size..... | " " | 4 | 9 |

| DOORS. | | 1½" | 1¾" | 2" |
|---|---|---|---|---|
| Two-panel square framed .....per ft. sup. | | 2/6 | 2/9 | 2/11 |
| Four-panel Do. ..... | " | 2/10 | 3/2 | 3/5 |
| Two-panel moulded both sides ..... | " | 3/2 | 3/5 | 3/8 |
| Four-panel Do. Do. ..... | " | 3/6 | 3/9 | 4/– |

## CARPENTER AND JOINER—continued.

### FRAMES.

| | | s. | d. |
|---|---|---|---|
| Deal wrot moulded and rebated ..... | per foot cube | 15 | 6 |

| | | 1" | 1¼" | 1½" |
|---|---|---|---|---|
| Plain deal jamb linings framed ..... | per ft. sup. | 1/11 | 2/– | 2/3 |
| Deal shelves and bearers ..... | " | 1/8 | 1/10 | 2/1 |
| Add if cross tongued ..... | " | 2d. | 2d. | 2d. |

### STAIRCASES.

| | 1" | 1¼" | 1½" | 2" | 2½" |
|---|---|---|---|---|---|
| Deal treads and risers in and including rough brackets ..... | 2/3 | 2/6 | 2/11 | — | — |
| Deal strings wrot on both sides and framed ..... | 1/9 | 2/1 | 2/3 | 2/9 | — |

| | | s. | d. |
|---|---|---|---|
| Housings for steps and risers ..... .. | each | 0 | 11½ |
| Deal balusters, 1 in. × 1¼ in. ..... | per ft. run. | 0 | 9 |
| Mahogany handrail; average 3 in. × 3 in. ..... | " " | 6 | 0 |
| Add if ramped ..... | " " | 11 | 10 |
| Add if wreathed ..... | " " | 23 | 9 |

### FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

| | | | |
|---|---|---|---|
| 6 in. barrel bolts ..... | 8½d. | Rim locks ..... | 2/4½ |
| Sash fasteners .....11½d. | | Mortice locks ..... | 5/3 |
| Casement fasteners ..... | 1/5 | Patent spring hinges and letting in to floor and making good ..... | 19/- |
| Casement stays..... | 1/2 | | |
| Cupboard locks ..... | 1/5 | | |

## FOUNDER AND SMITH.

| | | s. | d. |
|---|---|---|---|
| Rolled steel joists ..... | per cwt. | 19 | 0 |
| Plain compound girders ..... | " | 22 | 0 |
| Do. stanchions ..... | " | 25 | 0 |
| In roof work ..... | " | 30 | 0 |

## RAIN-WATER GOODS.

| | | 3" | 4" | 5" | 6" |
|---|---|---|---|---|---|
| Half-round plain rebated joints .. | ft. run | 1/11 | 2/4½ | 3/7 | 4/– |
| Ogee Do. Do. .. | " | 2/4½ | 3/1 | 3/10 | 4/9 |
| Rain-water pipes with ears ..... | " | 2/9 | 3/7 | | |
| Extra for shoes and bends ..... | each | 4/4 | 5/11 | | |
| Do. stopped ends ..... | " | 1/11 | 2/4½ | 3/7 | 4/– |
| Do. nozzles for inlets ..... | " | 2/2 | 2/7 | 3/10 | 4/3 |

## PLUMBER.

| | | s. | d. |
|---|---|---|---|
| Milled lead and laying in flashings and gutters ..... | per cwt. | 56 | 0 |
| Do. Do. in flats ..... | " | 52 | 0 |
| Extra labour and solder in coated cesspools ..... | each | 7 | 4 |
| Welt joint ..... | per ft. run. | 0 | 6 |
| Soldered seam ..... | " " | 1 | 10 |
| Copper nailing ..... | " " | 0 | 7 |

| | | ½" | ¾" | 1" | 1½" | 2" | 4" |
|---|---|---|---|---|---|---|---|
| Drawn lead waste | per ft. run | 10d | 1/6 | 1/9 | 3/1 | 3/10 | |
| Do. service | " | 1/5 | 1/11 | 2/3 | 3/6 | | |
| Do. soil | " | | | | | | 6/2 |
| Bends in lead pipe | each | | | | | 3/3 | 8/2 |
| Soldered stop ends | " | 1/2 | 1/8 | 2/1 | 2/ 0 | 3/6 | |
| Red lead joints .... | " | 11d. | 1/– | 1/3 | 1/11 | 2/4 | 4/10 |
| Wiped soldered joints | " | 2/10 | 3/6 | 4/– | 4/11 | 6/6 | 9/9 |
| Lead traps and cleaning screws ..... | " | | | | 14/7 | 19/6 | |
| Bib cocks and joints .. | " | 6/4 | 9/7 | 15/4 | 41/– | | |
| Stop cocks and joints | " | 15/4 | 17/2 | 25/8 | 64/– | | |

## PLASTERER.

| | | s. | d. |
|---|---|---|---|
| Render, float and set in lime and hair ..... | per yard sup. | 3 | 2 |
| Do. Do. Sirapite ..... | " " | 3 | 7 |
| Do. Do. Keen's ..... | " " | 4 | 9 |
| Add sawn lathing ..... | " " | 1 | 9 |
| Add metal lathing ..... | " " | 3 | 0 |
| Portland cement screed ..... | " " | 2 | 9 |
| Do. plain face ..... | " " | 4 | 6 |
| Mouldings in plaster ..... ..... | per 1 girth | 0 | 3 |
| One-and-a-half granolithic pavings ..... | per yard sup. | 6 | 7 |

## GLAZIER.

| | | s. | d. |
|---|---|---|---|
| 21 oz. sheet plain ..... | per foot sup. | 1 | 1 |
| 26 oz. Do. ..... | " " | 1 | 4 |
| Obscured sheet ..... | " " | 1 | 8 |
| ⅛ in. rolled plate ..... | " " | 1 | 0 |
| ¼ in. rough rolled or cast plate ..... | " " | 1 | 1 |
| ¼ in. wired cast plate ..... | " " | 1 | 7 |

## PAINTER.

| | | s. | d. |
|---|---|---|---|
| Preparing and distempering, 2 coats ..... | per yard sup. | 1 | 3 |
| Knotting and priming ..... | " " | | 8 |
| Plain painting 1 coat ..... | " " | 1 | 0 |
| Do. 2 coats ..... | " " | 1 | 9 |
| Do. 3 coats ..... | " " | 2 | 6 |
| Do. 4 coats ..... | " " | 3 | 3 |
| Graining ..... | " " | 2 | 8 |
| Varnishing twice ..... | " " | 2 | 0 |
| Sizing ..... | " " | 0 | 4 |
| Flatting ..... | " " | 0 | 8 |
| Enamel ..... | " " | 1 | 6 |
| Wax polishing ..... | per foot sup. | 0 | 10½ |
| French polishing ..... | " " | 1 | 3 |
| Preparing for and hanging paper ..... | per piece 2/– to 4/– | | |

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

# TENDERS.

**Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.**

*Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
‖ Denotes *accepted subject to modifications*.

---

BATH.—For collection of underground water at Beeks Common and Narley Farm, and conveyance to Monkswood Reservoir, for the T.C. :—

| | |
|---|---|
| *Mullins & Sons | £960 |

BIRKENHEAD.—Erection of 16 flats at Lansdowne-road, for the T.C. :—

| | |
|---|---|
| *Birkenhead House Construction Co... | £8,000 |

BIRKENHEAD.—Supply and installation of electrically driven turbo pumps at Flaybrick Hill and Tranmere Reservoirs, for the T.C. :—

| | |
|---|---|
| *Holden & Brooke, Manchester..... | £1,896 |

BRIDLINGTON.—For the construction of a sewer in Forty-foot-road, for the T.C. :—

| | |
|---|---|
| *H. C. Pullar & Co..... | £1,952 13 6 |

BRIDLINGTON.—For erection of residence, Station-road, for Mr. G. M. Richardson. Mr. C. F. Johnson, architect and surveyor, St. John's-road, Bridlington :—

| | |
|---|---|
| *F. W. Martindale (*brickwork*), Bridlington, and W. & F. Usher (*Joiner, &c*), Bridlington | £1,249 4 9 |

BRIGHTON.—Erection of 32 houses on Queen's Park site, for the T.C. :—

| | |
|---|---|
| *R. Lehane & Co., Darley Dale.... | £12,812 |

CAMBERWELL.—For the erection of a Primary Department at the Southampton-street Mission, for the Trustees. Mr. W. G. Farmer, architect, 262, Kennington-road, S.E.11 :—

| | |
|---|---|
| Henry Kent, Hither Green..... | £497 |
| Lister & Co., Camberwell..... | 439 |
| H. & J. Taylor, Lewisham..... | 430 |
| Chambers & Shaw, Kennington..... | 427 |
| Somerford & Son, Clapham..... | 423 |
| Smith & Sons, Camberwell..... | 410 |
| G. Brittain & Sons, Kennington..... | 396 |
| *W. Vogel Goad, Camberwell..... | 389 |

DENHAM PLACE.—Erection of market garden buildings on Denham Place estate, for the Middlesex C.C. :—

| | |
|---|---|
| A. Monk..... | £2,538 0 |
| Lovell & Sons..... | 2,372 0 |
| *W. S. Try ..... | 2,309 3 |

DUNDEE.—For circulating water pipes and foundations at generating station, for the T.C. :—

| | |
|---|---|
| *Yorkshire Hennebique Co... | £11,011 18 6 |

FINCHLEY.—For making-up various private streets, for the U.D.C. Mr. P. T. Harrison, Engineer, Council Offices, Finchley, N. 3 :—

| | |
|---|---|
| *J. Walker, London— | |
| Abingdon-road ..... | £523 10 6 |
| Avondale-avenue ..... | 1,835 17 7 |
| Montpelier-road ..... | 1,122 13 2 |
| *Charles Carter, London— | |
| Windermere-avenue ..... | 3,924 13 8 |
| Grove-road (3rd portion) .. | 2,144 19 4 |
| *W. Manders & Co., London— | |
| Highwood-avenue ..... | 1,847 3 3½ |

GILLINGHAM, KENT.—For the erection of a Secondary School for 200 boys at Gillingham, Kent, for the Education Committee. The County Education Architect, Sessions House, Maidstone :—

| | |
|---|---|
| J. W. Leech, Rochester ..... | £15,481 1 9 |
| Kirk & Randall, Ltd., London | 14,985 0 0 |
| West Bros., Strood..... | 14,984 10 0 |
| P. W. Gladstone, Wimbledon.. | 14,899 0 0 |
| H. H. Hollingsworth & Son, Peckham ..... | 14,365 0 0 |
| J. A. Davison, West Malling.. | 14,012 0 0 |
| Bunning & Fitton Adams, Ltd., Godalming ..... | 13,747 0 0 |
| T. T. Denne, Upper Walmer.. | 13,695 0 0 |
| E. J. Goodwin & Sons, Gillingham ..... | 13,650 0 0 |
| Cox Bros., Maidstone..... | 13,550 0 0 |
| W. Moss & Sons, Ltd., London | 13,526 0 0 |
| A. G. Webb & Sons, Rochester | 13,405 0 0 |
| Hill & Gurr, Bromley..... | 13,392 0 0 |
| J. W. Ellingham, Dartford.... | 13,370 0 0 |
| S. Vant, Folkestone..... | 13,327 0 0 |
| F. Tanner, Old Brompton.... | 13,315 0 0 |
| D. Godden & Son, Ashford.... | 13,298 0 0 |
| W. J. Parker, Ltd., London.. | 13,175 0 0 |
| T. Graham & Co., Beckenham | 13,153 0 0 |
| T. Wood & Son, Luton..... | 13,097 0 0 |
| J. H. Durrant, Rochester.... | 13,076 0 0 |
| G. E. Wallis & Sons, Ltd., Maidstone ..... | 12,996 0 0 |
| G. Bowes & Sons, Milton Regis | 12,973 0 0 |
| S. E. Moss, Southend-on-Sea.. | 12,850 0 0 |
| J. Elliman, Beckenham..... | 12,746 0 0 |
| W. W. Webster, Northampton | 12,620 0 0 |
| H. Friday & Sons, Erith..... | 12,525 0 0 |
| Thomas & Edge, Woolwich.. | 12,500 0 0 |
| T. Shillitoe, London..... | 12,500 0 0 |
| R. Merton Hughes, London.. | 12,371 0 0 |
| G. Gates & Sons, Rochester.. | 12,350 0 0 |
| C. E. Skinner & Son, Chatham | 12,284 0 0 |
| G. Browning, Canterbury.... | 12,228 0 0 |
| Jordan Village Industries, Ltd., Beaconsfield ..... | 11,850 0 0 |
| N. Smith & Son, Maidstone.. | 11,470 0 0 |
| ‡J. Bodle, Ltd., Eastbourne.... | 11,249 0 0 |

HALIFAX.—Alterations to air duct at Electricity Works, for the T.C. :—

| | |
|---|---|
| *C. Wade ..... | £200 11 9 |

HALIFAX.—Painting at Akroydon Museum, for the T.C. :—

| | |
|---|---|
| *H. Winterbottom ..... | £102 7 |

HASSOCKS, SUSSEX.—For completing detached residence on the Firs Estate, for Mr. H. Leighton. Mr. A. J. McLean, architect and surveyor, 55, Haywards-road, Haywards Heath :—

| | |
|---|---|
| *Thos. White, Haywards Heath ..... | £860 |

HOLMFIRTH.—For erection of a detached house in Woodhead-road. Mr. P. N. Brown, architect and surveyor, Hollowgate, Holmfirth :—

Robert Turner & Co. (*excavator and bricklayer*), Holmfirth.
Henry Hollingworth (*carpenter and joiner*), Holmfirth.
Ben Donkersley (*plumber and glazier*), Holmfirth.
Henry Haigh & Son (*concreter*), Holmfirth.
Pickles Bros. (*tiler*), Leeds.
Henry Haigh & Sons (*plasterer*), Holmfirth.
Lockwood & Wilkinson (*painter and decorator*), Holmfirth.
Honley Engineering Co. (*electrical engineer*), Honley.

HUDDERSFIELD.—For erection of a cinema theatre at Paddock Head. Messrs. C. F. Mallinson & Son, architects, Market-place, Huddersfield :—

J. Wimpenny & Co. (*mason, bricklayer, carpenter, joiner and concreter*), Huddersfield.
W. E. Jowitt (*slater*), Huddersfield.
G. H. Day & Sons (*plasterer, painter*), Huddersfield.
W. H. Heywood & Co. (*steelwork*), Huddersfield.
J. T. Beaumont (*electric*), Huddersfield.
T. Allison, Ltd. (*plumber*), Huddersfield.

Total £6,150 16

HULL.—For the erection of 74 houses on the West Hull Estate, for the T.C. :—

| | Price. | Cost per house. |
|---|---|---|
| *Platt & Featherstone, Goole—3 blocks of 4 dwellings, Type "A".. | £6,311 10 | 6..£525 19 2 |
| *National Building Guild, Ltd., Manchester—3 blocks of 4, Type "B" | 5,575 16 | 9.. 464 13 1 |
| *Ditto—1 block of 4, Type "D" ..... | 2,210 8 | 4.. 552 12 1 |
| *Ditto—5 blocks of 4, Type "E" ..... | 9,917 18 | 9.. 495 17 11 |
| *J. H. Fenwick, Hull—7 blocks of 2, Type "F" | 8,505 0 | 0.. 607 10 0 |
| *Ditto—6 blocks of 2, Type "G" ..... | 5,580 0 | 0.. 465 0 0 |

LEEDS.—Erection of electricity sub-station on Crossgates housing estate, for the T.C. :—

| | |
|---|---|
| *W. Airey & Son..... | £203 15 0 |

LEEDS.—Erection of wrought-iron fencing at the "Hollies," for the T.C. :—

| | |
|---|---|
| *Dixon, Powner & Sons..... | £169 0 2 |

LEEDS.—Erection of conveniences at Middleton Park, for the T.C. :—

| | |
|---|---|
| *P. Rhodes ..... | £593 |

LEUCHARS.—For laying of fireclay pipes and other works for a modern drainage system, for the St. Andrew's District Committee. Messrs. Bruce & Proudfoot, engineers, Kirkcaldy :—

| | |
|---|---|
| David Adamson, Cowdenbeath | £4,821 4 6 |
| James Strachan & Son, Cupar.. | 4,399 0 4 |
| Tulloch & Strachan, Dundee.. | 4,299 3 0 |
| G. Percy Trentham, Ltd., Edinburgh ..... | 4,121 12 9 |
| John Summerville, Dunfermline | 4,002 8 5 |
| James Ritchie, Dunfermline.... | 3,997 2 7 |
| John Miller & Co., Inverkeithing | 3,645 12 3 |
| R. J. Morrison, Kirkcaldy.... | 3,568 18 3 |
| North of Scotland Transport Co., Ltd., Montrose ..... | 3,528 12 8 |
| Watson & Sons, Perth..... | 3,500 0 0 |
| John Ritchie, St. Andrews.... | 3,484 4 1 |
| R. Pert & Son, Montrose..... | 3,423 12 9 |
| Todd & Anderson, Alloa..... | 3,408 8 0 |
| Livingston & Sons, St. Andrews | 3,365 7 7 |
| A. H. Robertson, Inverkeithing | 3,337 5 4 |
| *P. M. Henderson, Markinch.... | 3,334 14 8 |

LONDON.—Supply and delivery to Lower Sydenham station of bricks for the construction of the foundations, &c., of dust destructor, for the Lewisham B.C. :—

25,000 3 *in. and Side Arch, and* 2,000 2½ *in. Fire Bricks.*

| | At per 1,000. 3 in. and Side Arch. | 2½ in. | Total. |
|---|---|---|---|
| Eastwoods, Ltd. ..... | 253/0.. | 210/0.. | £337 5 0 |
| *J. H. Sankey & Co., Ltd. | 259/0.. | 217/0.. | 345 0 0 |
| Charles Pearce ..... | 267/6.. | 225/0.. | 356 17 6 |
| E. J. & J. Pearson, Ltd. | 277/3.. | 234/6.. | 370 0 3 |
| Harris & Pearson..... | 277/3.. | 234/6.. | 370 0 3 |

60,000 *Fletton Bricks.*

| | At per 1,000 | Total. |
|---|---|---|
| *J. H. Sankey & Co., Ltd..... | 72/2 .. | £216 10 0 |
| Eastwoods, Ltd. ..... | 72/8 .. | 218 0 0 |
| London Brick Co., Ltd..... | 72/8 .. | 218 0 0 |
| Dogsthorpe Star Brick Co., Ltd. | 75/0 .. | 225 0 6 |
| Charles Pearce ..... | 75/0 .. | 225 0 6 |

LONDON.—Supply of lime to the Leyton U.D.C. :—

| | |
|---|---|
| *Buxton Lime Firms Co. .. | £2 13 7 per ton |

LONDON.—For alterations, &c., to Nos. 29 and 30, Trinity-square, E.C. Mr. Henry Smith, 37, High Holborn, W.C. :—

E. A. Roome & Co., Ltd., London.

MARKET DRAYTON.—For street works, &c., for the U.D.C. :—

| | |
|---|---|
| *C. Jackson, Tipton—Street works, | £1,350 15 0 |
| —Sewers .... | 452 16 8 |

MICKLETON (GLOS.).—For erection of shop and premises, for the Bidford-on-Avon and Mickleton Co-operative Society, Ltd. Mr. A. H. Callaway, architect and surveyor, Shakespeare Chambers, Stratford-on-Avon :—

| | |
|---|---|
| Sanders & Sons, Ltd., Cirencester | £3,300 0 0 |
| Dawkins, Harris & Weaver, Ltd., Chepstow ..... | 3,232 0 0 |
| Fincher & Co., Stratford-on-Avon | 2,977 10 0 |
| G. Hunt, Shipston-on-Stour.. | 2,784 0 0 |
| H. & J. Smith, Bidford-on-Avon | 2,724 11 8 |
| H. Colley, Wootton Wawen.... | 2,652 0 0 |
| Smith & Unitt, Stratford-on-Avon ..... | 2,556 0 0 |
| H. W. Crisp, Bretforton..... | 2,506 18 6 |
| Cockerell & Jelfs, Badsey..... | 2,465 9 9 |
| J. Harris & Sons, Stratford-on-Avon ..... | 2,400 0 0 |
| Alcester Builders, Ltd., Alcester | 2,379 0 0 |
| Espley & Co., Evesham..... | 2,275 0 0 |
| C. T. Tucker, Bristol ..... | 2,243 0 0 |
| Whateley & Sons, Stratford-on-Avon ..... | 2,220 0 0 |
| N. F. Drew, Ltd., Chalford, Stroud | 2,210 0 0 |
| James Cox & Co., Stratford-on-Avon ..... | 2,198 0 0 |
| *P. C. Harris, Stratford-on-Avon | 2,134 0 0 |

MYTHOLMROYD.—For laying out of village memorial site in garden form, for the War Memorial Committee :—

| | |
|---|---|
| *Rashley, Huddersfield ..... | £250 |

NORTHAMPTON.—Conversion of hovel into cowshed at Coton Lodge Farm, for the T.C. :—

| | |
|---|---|
| *J. Leatherland. ..... | £148 |

PAISLEY.—For painter work at the Public Baths, Storie-street. The Master of Works, 13, Gilmour-street, Paisley :—

| | |
|---|---|
| D. Bett & Son, Paisley..... | £341 |
| Wm. Osborne, Paisley ..... | 291 |
| Cowan & Stewart, Paisley ..... | 274 |
| David Murray & Son, Paisley ..... | 263 |
| *Robert Thomson, Paisley..... | 232 |

PORTSMOUTH.—For pulling down old buildings, and the erection of additions, instructor's residence, &c., at the Headquarters Drill Hall of the 24th Wessex Brigade, Portsmouth, for the Territorial Army Association. Mr. A. E. Cogswell, Architect, Prudential Buildings, Portsmouth :—

| | |
|---|---|
| Till & Son, Southsea ..... | £2,783 2 1 |
| T. J. McCormick, Portsmouth.. | 2,466 0 0 |
| A. E. Porter, Portsmouth..... | 2,372 0 0 |
| A. E. Hobbs, Havant..... | 2,309 1 8 |
| J. Croad, Portsea ..... | 2,300 0 0 |
| G. J. Davis & Son, Southsea.. | 2,250 0 0 |
| Light Bros. & Flowers, Ltd., Portsmouth ..... | 2,198 0 0 |
| W. P. Wigmore & Son, Southsea | 2,151 16 0 |
| Howe & Bishop, Southsea.... | 2,076 5 0 |
| J. Crockerell, Southsea..... | 1,984 0 0 |
| S. Salter, Southsea..... | 1,937 0 0 |
| F. Corke & Co., Southsea..... | 1,933 0 0 |
| Tanner Bros., Southsea..... | 1,916 0 0 |
| E. & A. Sprigings, Portsmouth | 1,895 0 0 |
| *F. J. Privett, Southsea..... | 1,867 0 0 |

RAINHAM.—For erection of 13 houses at East Moor-street Farm. The County Education Architect, Sessions House, Maidstone :—

| | Price per house. | Total. |
|---|---|---|
| H. Friday & Sons, Erith..... | £740 0.. | £9,620 0 |
| Hyder & Sons, Tonbridge.... | 670 0.. | 8,710 0 |
| A. H. Horne, Rainham..... | 664 0.. | 8,632 0 |
| A. E. Tong, Gravesend..... | 660 0.. | 8,580 0 |
| S. E. Moss, Southend-on-Sea.. | 650 0.. | 8,450 0 |
| J. W. Leech, Rochester..... | 598 0.. | 7,774 0 |
| G. Gates & Sons, Rochester.. | 598 0.. | 7,774 0 |
| W. Pattinson & Sons, Ltd., London ..... | 597 0.. | 7,761 0 |
| G. Browning, Canterbury.... | 593 0.. | 7,709 0 |
| J. Brittenden & Son, Newington ..... | 585 0.. | 7,605 0 |
| T. J. Lovett & Son, London.. | 585 0.. | 7,605 0 |
| Tutin Bros., Harrow..... | 585 0.. | 7,605 0 |
| Martin & Newman, Maidstone | 581 0.. | 7,553 0 |
| Norman Smith & Son, Maidstone ..... | 573 0.. | 7,449 0 |
| Thomas & Edge, Woolwich.. | 570 0.. | 7,400 0 |
| A. Osborne, Rochester..... | 565 0.. | 7,345 0 |
| C. E. Skinner & Son, Chatham | 561 10.. | 7,299 10 |
| A. V. Stinton, Rainham..... | 560 0.. | 7,280 0 |
| C. Peppiatt, Chiswick..... | 545 0.. | 7,085 0 |
| Kemp Bros., Rainham..... | 521 0.. | 6,773 0 |
| Cox Bros., Maidstone..... | 520 0.. | 6,760 0 |
| E. T. Richards, Strood..... | 515 0.. | 6,595 0 |
| J. H. Durrant, Rochester.... | 496 0.. | 6,448 0 |
| R. Merton Hughes, London.. | 491 0.. | 6,383 0 |
| ‡West Bros., Ltd., Strood..... | 447 5.. | 5,814 5 |

SALFORD.—Surface water drainage work on Weaste housing site, for the T.C. :—

| | |
|---|---|
| *T. Wilson, Pendleton..... | £128 |

SALFORD.—Supply of 150 tons of lime, to the T.C. :—

| | |
|---|---|
| *Midland Builders' Supply, Leamington Spa ..... | £318 15 |

SALFORD.—Supply of patent self-adjusting railing, &c., to the T.C. :—

| | |
|---|---|
| *Bayliss, Jones & Bayliss, Wolverhampton ..... | £101 4 |

SALFORD.—For supply of materials, to the T.C. :—

| | | | |
|---|---|---|---|
| *Heys Bros.—Barns flags | £390 | 0 | 0 |
| *H. Keys & Co.—Curbs | 127 | 1 | 8 |
| *T. Ratcliffe, Bacup—Do. | 162 | 14 | 2 |
| *J. Law—Do. | 262 | 10 | 0 |
| *C. H. Phillips—Stone chippings | 114 | 7 | 6 |
| *Rainford Potteries—Earthenware pipes | 218 | 2 | 1½ |
| *Horrocksford Lime Co.—Tarred limestone | 124 | 3 | 4 |
| *J. J. Lee—Tarred slag | 446 | 5 | 0 |
| *Partington Steel & Iron Co.—Tarred slag | 120 | 0 | 0 |
| *Penmaenmawr & Welsh Granite Co.—Granite setts | 4,687 | 10 | 0 |
| *Williams Bros.—Broken granite | 222 | 18 | 4 |
| *Shap Granite Co.—Broken granite | 429 | 3 | 4 |
| *Naylor Bros.—Granite chippings | 262 | 10 | 0 |

SALFORD.—Supply of lead pipe to Gas Department of T.C. :—

*R. E. Roberts & Son, Bolton (approx.) £900

SALFORD.—Supply of materials to the Tramways Department of the T.C. :—

| | | | |
|---|---|---|---|
| *Buxton Lime Firms Co.—Chippings | £160 | 0 | 0 |
| *Abel Ballast & Lighterage Co., Liverpool—Sand | 312 | 10 | 0 |
| *Lancashire Chemical & Mineral Co.—Sand | 393 | 15 | 0 |
| *Isaac Birtley & Co.—Oils | 606 | 17 | 6 |

SALFORD.—For provision of heating apparatus at Fredench-road station, for the T.C. :—

*Saunders & Taylor, Manchester £225

SALFORD.—Making up approach road at Agecroft Depot :—

*T. Wilson, Pendleton £1,858 18 4

SALFORD.—For works at Hankinson-street School, for the T.C. :—

| | | | |
|---|---|---|---|
| *Worsnip & Son, Salford—Painting | £159 | 10 | 6 |
| *S. Willshaw, Broughton—Paving | 253 | 10 | 0 |
| *and* | 74 | 15 | 0 |

SALFORD.—For making up (*a*) Oaklands-road, and (*b*) Northallerton-road, for the T.C. :—

| | | | |
|---|---|---|---|
| *T. Wilson (*a*) | £3,331 | 6 | 3 |
| (*b*) | 984 | 7 | 4 |

SKEGNESS.—For (1) repaving Lumley-road; (2) brick and tile cartshed, for the U.D.C. Mr. R. H. Jenkins, Surveyor, Council Offices, Skegness :—

*Lumley-road*—

*Ernest Revill, Chesterfield £2,865 0

*Cartshed*—

*F. & W. Baker, Skegness 251 12

WANDSWORTH.—For re-forming roads at St. John's Hospital, for the B.G. Mr. F. J. Curtis, Clerk, Union Offices, Wandsworth, S.W. 18 :—

| | | | |
|---|---|---|---|
| J. Cronk & Son, London | £677 | 0 | 0 |
| T. Adams, London | 669 | 0 | 0 |
| G. Neal, London | 585 | 0 | 0 |
| J. Mowlem & Co., Ltd., London | 558 | 17 | 10 |
| S. Lane, London | 550 | 0 | 0 |
| W. H. Wheeler & Co., Ltd., London | 514 | 0 | 0 |
| *J. Sands, London | 390 | 0 | 0 |

WEYMOUTH.—For making up Southview-road the T.C. :—

| | | | |
|---|---|---|---|
| Theo. Conway, Ltd. | £645 | 0 | 0 |
| Bird & Co. | 857 | 14 | 8 |
| Campbell, Kenyon & Co. | 737 | 6 | 0 |
| A. E. Whettam | 683 | 10 | 4 |
| E. Ireland | 1,070 | 0 | 0 |
| Jesty & Baker | 694 | 0 | 0 |
| G. F. Bowring | 738 | 0 | 0 |
| *Borough Surveyor's estimate | 580 | 0 | 0 |

### Wages on Public Works.

The Public Works Conciliation Board has decided that, as from the first pay period following the end of March, the rates for men engaged on public works in the City and County of London be reduced by 1d. per hour. The new rates will be as follows: Labourer, 1s. 4½d.; blacksmith, 1s. 9d.; concrete leveller, 1s. 4½d.; duct or earthenware drain layer, 1s. 5½d.; fitter, 1s. 9d.; granite mason (kerb, &c.), 1s. 10d.; granite sett dresser, 1s. 9d.; jointer, 1s. 5½d.; kerb fixer, 1s. 9d.; pavior, 1s. 9d.; platelayer, 1s. 5½d. to 1s. 6½d.; platelayer's labourer, 1s. 4½d.; pneumatic pick operator, 1s. 5½d.; rammerman, 1s. 5½d.; scaffolder, 1s. 7½d.; screeder, 1s. 5½d.; steam roller driver, 1s. 8½d.; street mason and flag dresser, 1s. 9d.; tarpot man, 1s. 4½d.; timberman, 1s. 5½d.; wood block layer, 1s. 5½d.; and watchman, 8s. 6d. minimum day or night.

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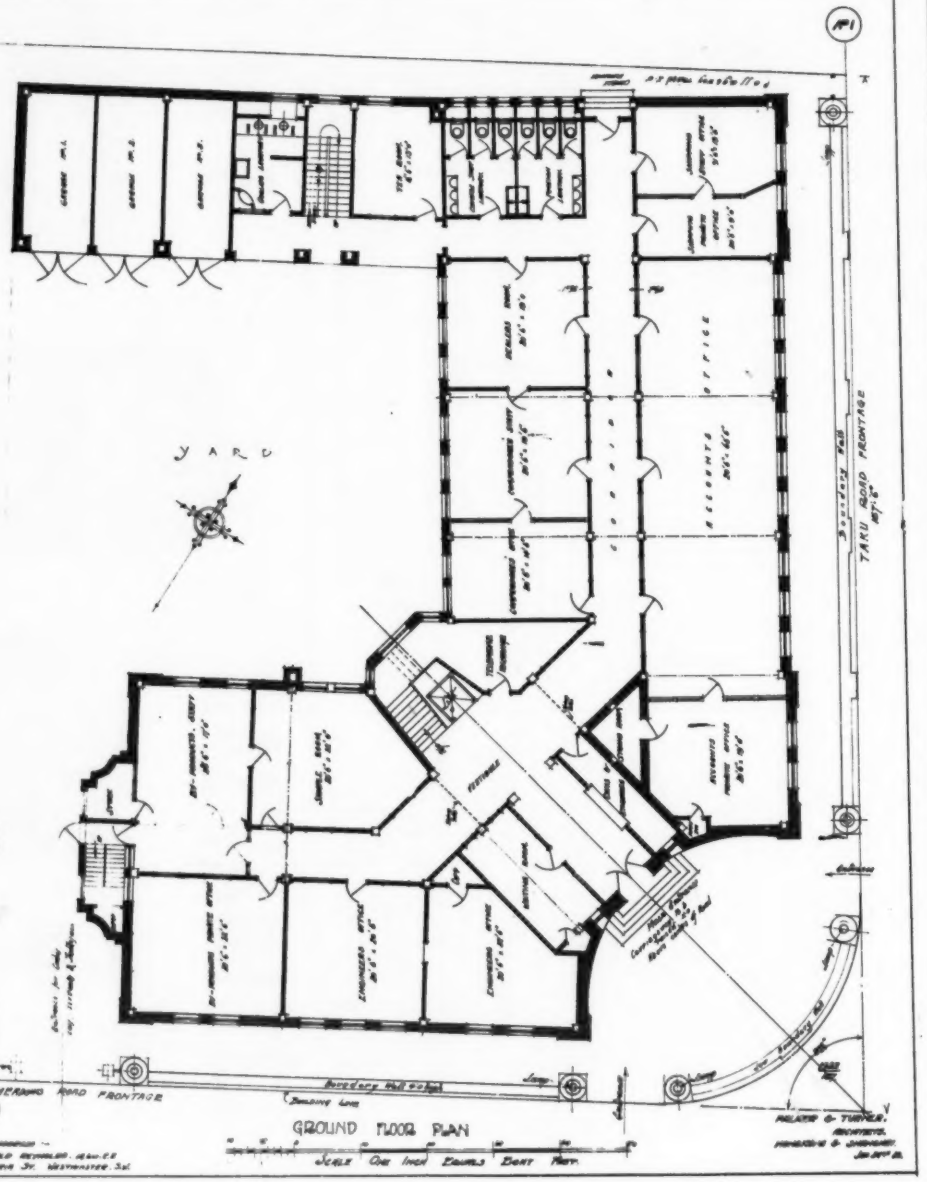


## THE ASIATIC PETROLEUM CO: LTD:
## TIENTSIN

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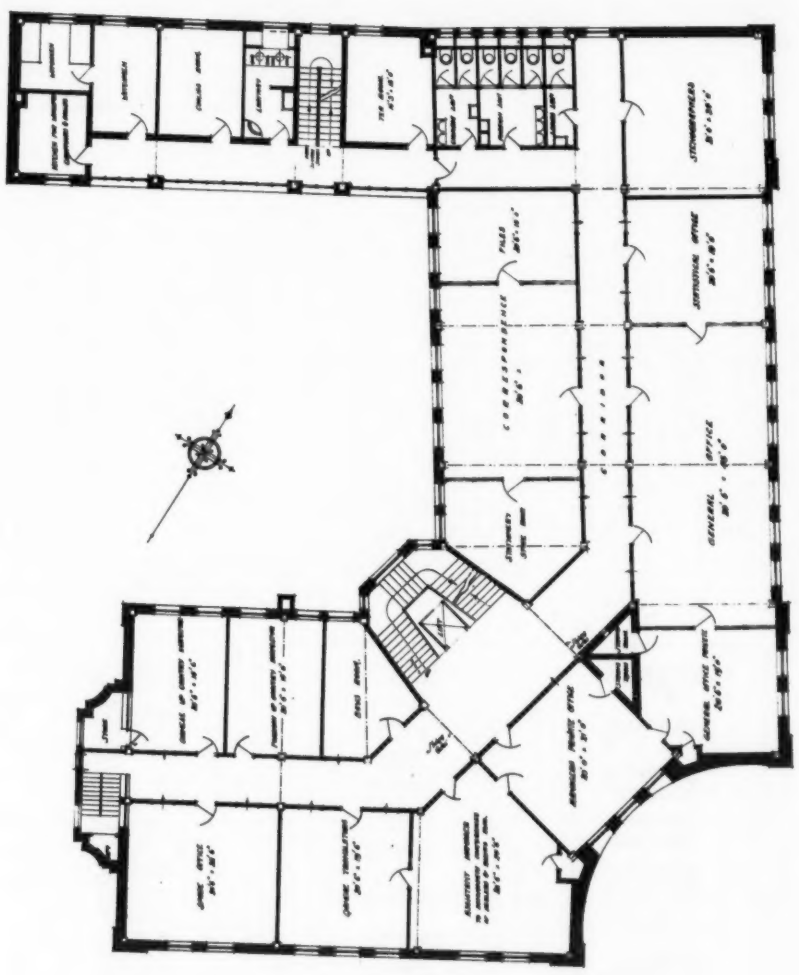


THE BUILDER. APRIL 7. 1922.

## THE ASIATIC PETROLEUM CO: LTD:
## TIENTSIN

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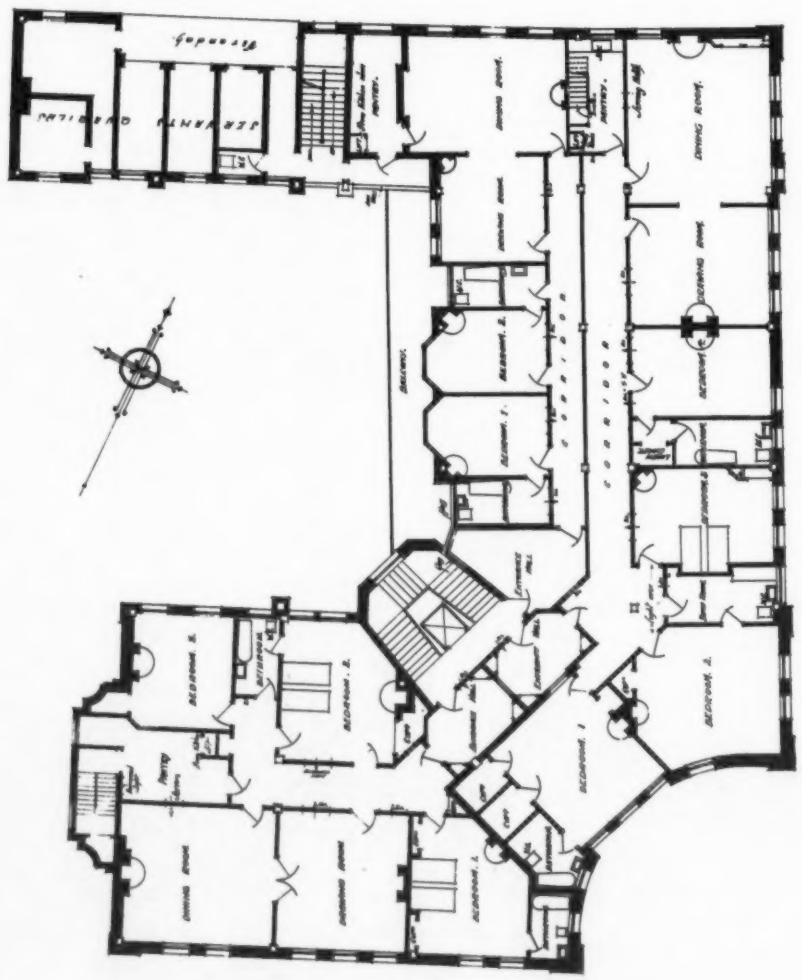
3.




3. 2ND FLOOR PLAN

1922. 115.

PALMER & TURNER, ARCHITECTS, HONGKONG & SHANGHAI.

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## TIENTSIN

REVISED THIRD FLOOR PLAN
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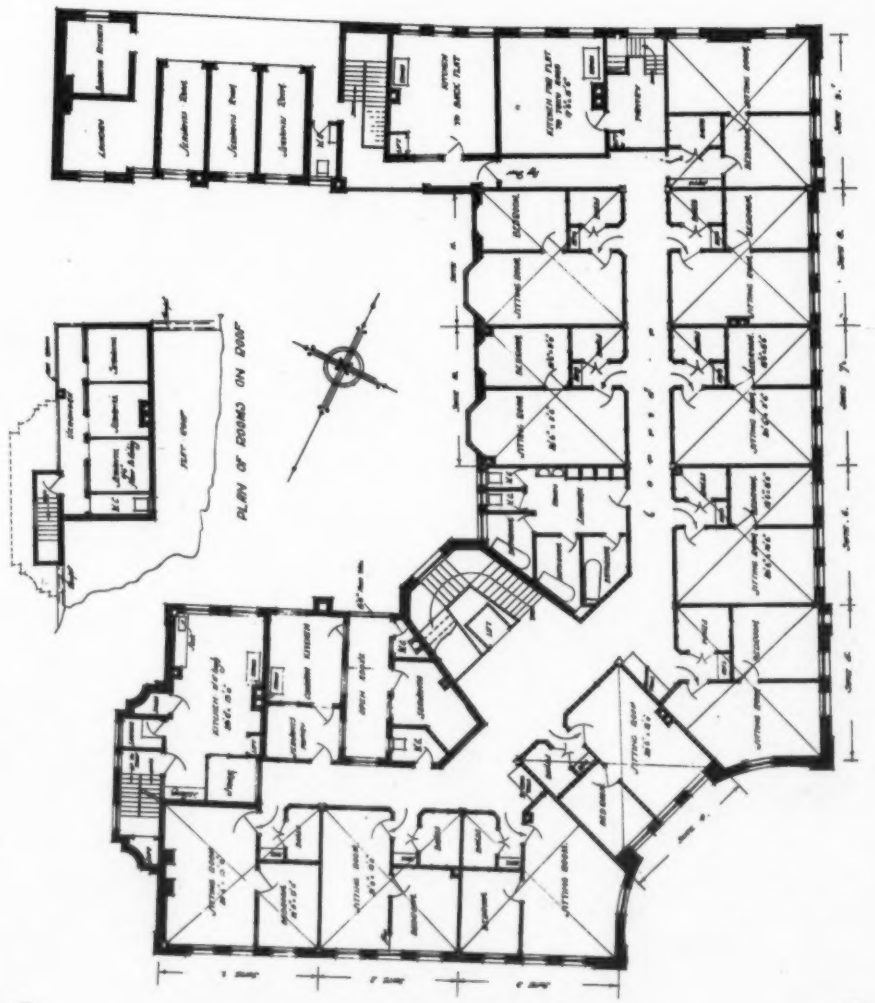
4.




4. THIRD FLOOR PLAN

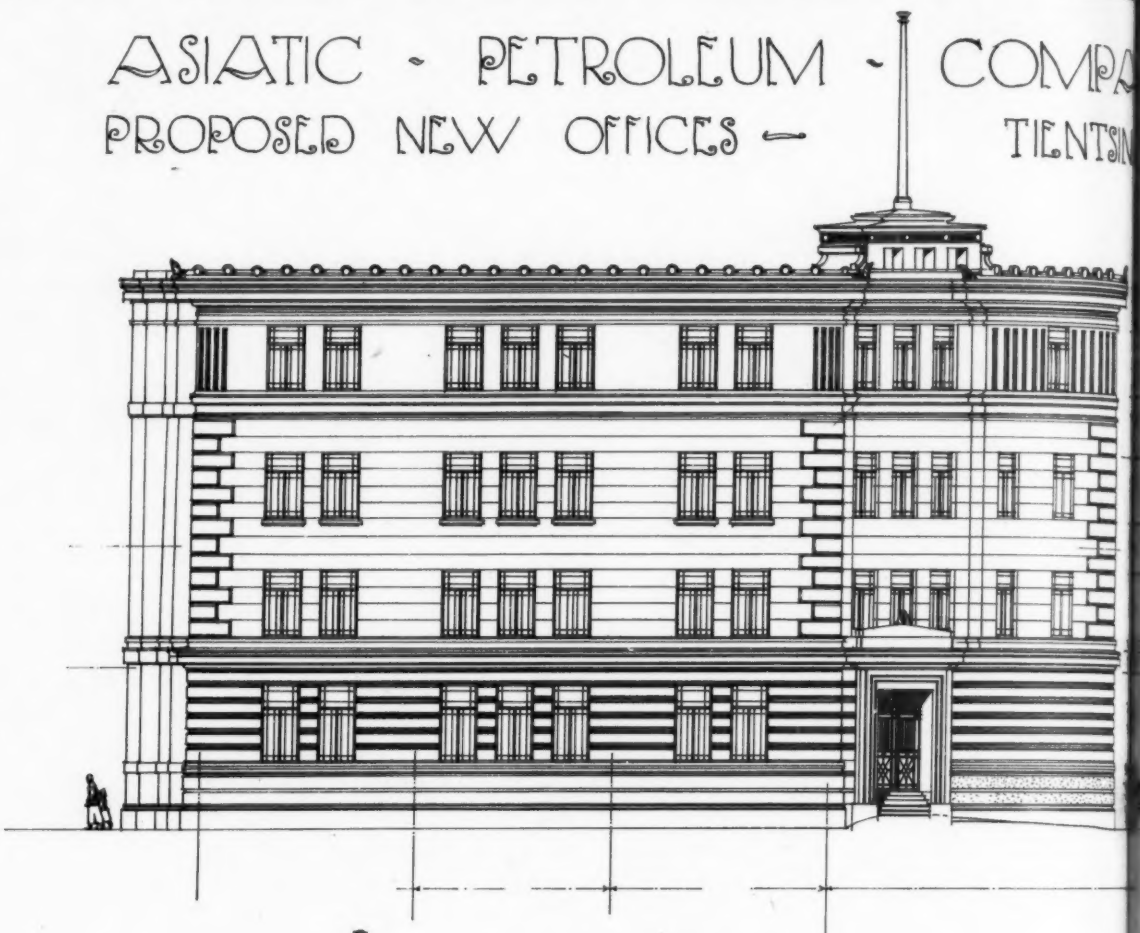
1922. 110.

PALMER & TURNER ARCHITECTS HONGKONG & SHANGHAI

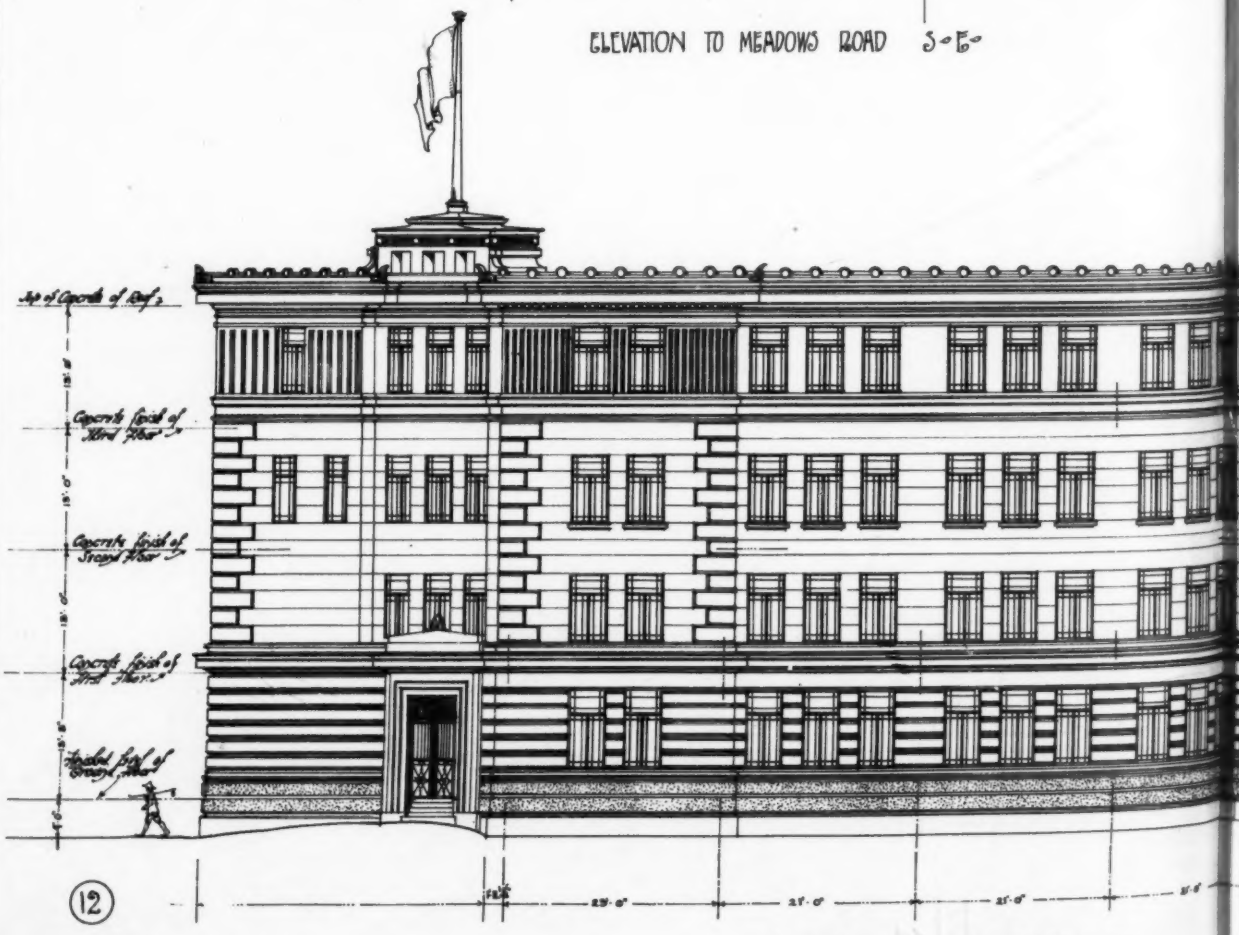
THE BUILDER. APRIL 7, 1922.

# ASIATIC - PETROLEUM - COMPANY

## PROPOSED NEW OFFICES — TIENTSIN -



ELEVATION TO MEADOWS ROAD S-E-




ELEVATION TO TAKU ROAD (N-E-)

SCALE ONE INCH EQUALS EIGHT FEET.

LONDON ADDRESS :—
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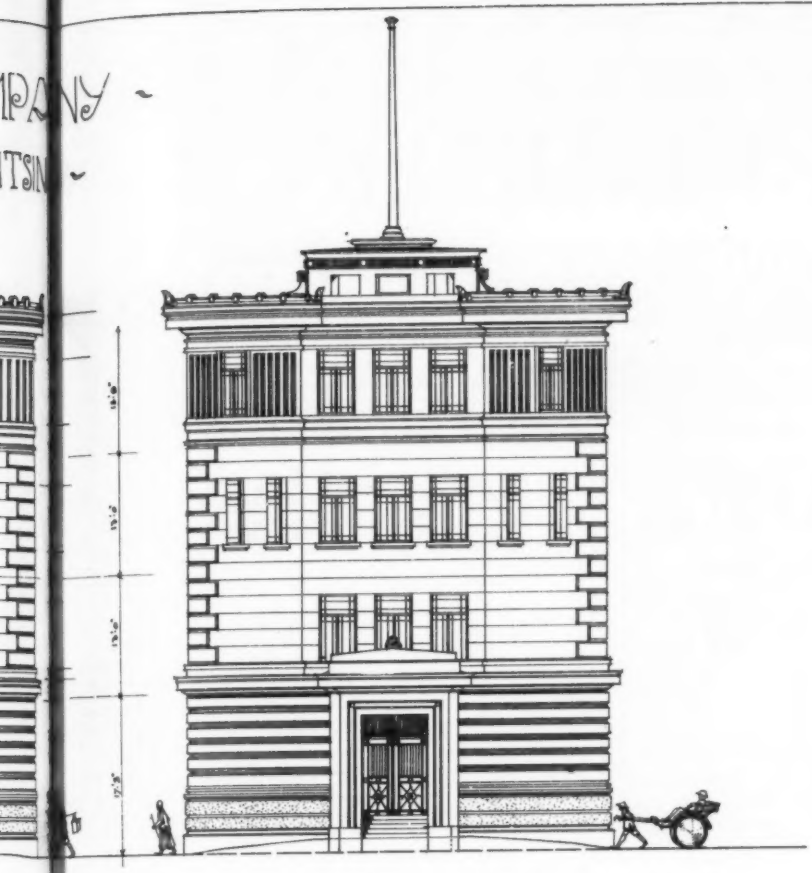
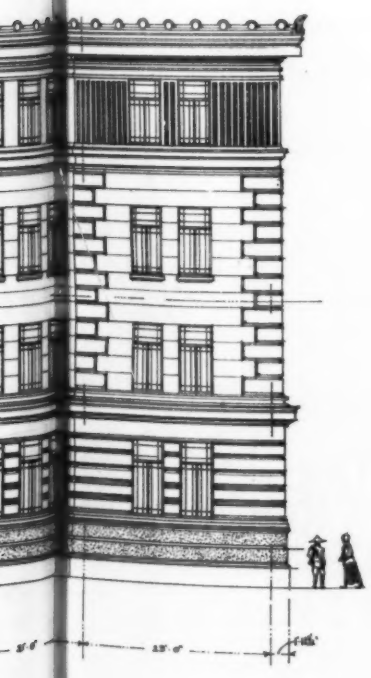
109 VICTORIA STREET S.W.

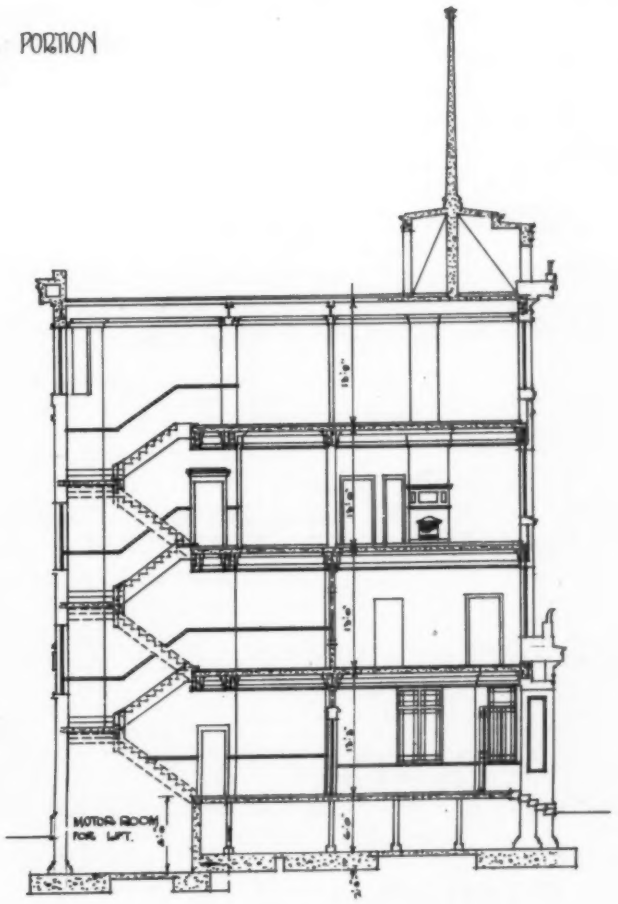
MESSRS. PALMER & TURNER, ARCHITECTS

12.



ELEVATION OF CIRCULAR PORTION
AT EAST CORNER.






SECTION A.B.

1922
121.

MESSRS PALMER & TURNER
ARCHITECTS
SHANGHAI & HONGKONG.
1922.

EIGHT FEET.

& TURNER ARCHITECTS.